INDUSTRY IN TROUBLE: ECONOMICS AND POLITICS OF THE NEW ENGLAND FISHERIES

by

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ABSTRACT

As World War II ended, the fortunes of the New England fishing industry turned downward. If one looked closely, however, it was clear that the fisheries were diverse and that not all parts suffered. The industry had two major segments, the inshore and the offshore fisheries. The inshore fisheries, small boats that worked closer to shore and were sensitive to bad weather and the availability of fish, seemed to have few problems. These included fisheries for herring, lobster, shrimp, whiting, inshore groundfish, shellfish, and industrial fish. The offshore industry, composed of larger boats limited by gear specialization to certain fisheries, worked out of the large New England ports. Scallopers, seiners, and those who dragged for flounder prospered. In contrast, the groundfish industry, the trawl fishery for cod, haddock, hake, cusk, pollock, and redfish, had severe problems from 1950 through the mid-1960s. Landings of groundfish fell. The value of the catch declined. Most boats operated in the red, and fishermen's wages fell absolutely as well as relatively. The number of boats and fishermen in the industry declined.

During the 1950s and 1960s the leaders of the groundfish industry appealed to government for help. They diagnosed the source of their troubles as inexpensive foreign imports which lowered the price of the domestic product to a level where no one could make a living. From the mid-1950s on, after the industry lost bids for tariff protection, Congress passed legislation and administrative agencies initiated programs that would either increase the demand for fish or would help to reduce the costs of fish harvesting. These

efforts included government purchasing, safety information programs, training for fishermen, research and development funds, and loans and subsidies for vessel construction and repair.

The programs had little effect on the welfare of the groundfish industry, however. The programs were too small to make a difference, touched other parts of the industry but not the groundfishery, or required the groundfish industry to make expenditures which it could not afford. Even if the industry had gotten the programs they most desired on the scale they wanted, however, the programs probably would have made the groundfish troubles worse. Tariffs would have raised prices somewhat, but since demand for groundfish was very price elastic, total revenue from the fishery would have fallen. With the replacement of all offshore groundfish boats, pressures would have increased on the fish resources. Costs of fishing would have increased to offset the higher revenues, and the fish stocks would have been depleted.

In the 1960s large numbers of foreign fishing vessels began to work on the offshore banks. By the late 1960s several fish stocks were severely depleted. The fishing industry pressed government to restrict the foreigners. Multilateral negotiations through the International Commission for the Northwest Atlantic Fisheries failed to restrain fishing effort, and the Conference on the Law of the Sea could not reach agreement. Congress passed the Fishery Conservation and Management Act of 1976 which extended U.S. Fishery jurisdiction to 200 miles and set up domestic fishery management through regional councils.

As the 200-mile limit went into effect in 1977, the foreigners were successfully excluded from the fisheries zone. Management of the groundfish industry under the legislation proved particularly difficult, however. The New England Fishery Management Council faced numerous crises, and the management of the industry disintegrated into ineffective regulation with little coherence.

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PREFACE

Throughout my graduate study I have been interested in problems of economic development and employment and in public efforts to provide more jobs and to employ more workers. I have been particularly concerned with declining regional economies and troubled industries and with the role of government in easing the employment difficulties associated with them.

During spring 1977 as I thought about a dissertation topic, the newspapers carried stories about the New England fishing industry. The articles I read and conversations I had as I thought about studying the fisheries suggested that the industry's story touched many of my planning and intellectual interests. The 200-mile limit, effective March 1, 1977, promised to revitalize the industry, the news articles said, by getting foreigners off the fishing grounds. The argument did not sound right. Why should excluding foreign fishermen suddenly make the fishing industry prosper and grow? It seemed more reasonable that the industry had more fundamental problems which the 200-mile limit would not solve or that fishermen and boat owners were already doing well and would continue to do so. What was the rationale for such government involvement, I wondered, and what effect was it having?

On the other hand, maybe New England had a better chance of saving this industry than others. New England certainly had a locational advantage in fishing, and no technological change had made fish harvesting completely

obsolete. Public involvement of the right kind might add considerably to New England's fishery income and employment in some of the highest unemployment areas in the region.

Public officials and industry representatives had the same idea. Extension of fishery jurisdiction to 200 miles should be accompanied by other public investment to spur the industry's growth, they were arguing. Maine, Massachusetts, and Rhode Island conducted studies of what the state governments could do to help. Public agencies in Boston, Gloucester, New Bedford, Portland, and numerous small towns planned construction or rehabilitation of port facilities for fishing and applied for millions of dollars of federal funding. Yet, as several planners told me, though fishing was an important source of employment for their communities, they had a hard time getting a good idea of where the fishing industry was going or what government should be doing.

As I began to look into the fishing industry's story, I found that the 200-mile limit was the latest of many efforts to aid the New England fisheries. The fishing industry could therefore provide me with a large amount of information for addressing questions about troubled industry and about government intervention in industrial decline. In addition, fishery management under the 200-mile limit offered a substantial public economic development effort which I could observe in process rather than study through interviews and records, as I would the historic efforts to help the industry. The management work would also provide a chance to

learn about the industry when I could find almost nothing to read and when I knew so little that I could not ask useful questions.

As the analysis in this thesis suggests, the fishing industry's problems and the government efforts to solve them did indeed touch all these issues. However, the problems and the reasons for the failure of public efforts to help were far more complicated than I had ever expected, and many of my early views of the industry were far too simple.

In the process of researching and writing this thesis I have relied on a great deal of assistance from other people. The National Science Foundation awarded me a fellowship which allowed me to begin my doctoral work at M.I.T. The Joint Center for Urban Studies of Massachusetts Institute of Technology and Harvard University gave me a fellowship and provided me with peaceful office space for the duration of my thesis work. Dr. Arthur Solomon, director of the Joint Center, made it possible for me to continue to work there even when my fellowship year ended. The Gorton Corporation in Gloucester, Massachusetts, named me the Gorton Fellow for the Study of the New England Fisheries. Their financial support provided me with the resources to pursue my studies during the first year that I began learning the complicated story of the fishing industry in New England. James Ackert, whose career has spanned the period this thesis discusses and has touched all the major events in the fisheries during that time, served as my tie with Gorton Corporation. He provided me with enormous amounts of personal information about events in the industry during the last thirty years. In the second year of my research,

Woods Hole Oceanographic Institution named me Predoctoral Fellow in Marine Policy and Ocean Management. Funds from the National Marine Fisheries Service made the fellowship possible. I am especially indebted to Dr. Leah Smith at Woods Hole Oceanographic Institution who worked to arrange the fellowship and to Dr. Bradford Brown and James Kirkley at NMFS for backing my efforts to find support.

Several people helped me considerably in my search for information on the fishing industry. Ralph Mayo at the Northeast Fisheries Center did computer work for me on the National Marine Fisheries Service "weigh-out" data files. The information was very important to my study but would have been inaccessible without Ralph's help because the individual records are confidential. Jasmine Isobe, at that time a member of the staff of Congressman Daniel Akaka of Hawaii, helped me in gathering information from the House Committee on Merchant Marine and Fisheries as well as from other congressional offices and administrative agencies. Her help tremendously reduced the time I needed to spend in locating material in Washington, D. C. Meta Cushing of the Gloucester Economic Resources Center and the Gloucester Fishermen's Wives Association provided me with access to the files of the Gloucester Fisheries Commission and, through regular conversations over two years, gave me a better understanding of the Gloucester fishing industry than I ever could have acquired by myself. Meta and Mary Lord, a graduate student in Urban Studies and Planning at M. I. T., interviewed large numbers of Gloucester and Chatham fishermen. That data as well as Meta's and Mary's insights

from the interviews into the character of the fisheries and the problems of fishery management added greatly to my knowledge. Fishermen, fishermen's wives, and fish dealers from every New England port; the members and the staff of the New England Fishery Management Council; and others concerned with the fishing industry as journalists, researchers, government representatives, or planners taught me a large share of what I know about the industry and its present problems through our conversations and through their testimony at meetings on fishery management.

Finally, several people read and responded to my work as I proceeded. Their comments have been enormously helpful in clarifying my thinking and direction. They included the members of my thesis committee, Professor Bennett Harrison, Professor Lawrence Susskind, and Dr. Leah Smith, and a friend, Professor Robert Fogelson.

CHAPTER 1

INTRODUCTION

On June 10, 1974, the "Sharon and Noreen," a 103 foot fishing trawler from New Bedford, Massachusetts, sailed up the Potomac to Washington in the culmination of the "Sail on Washington." She carried fishermen, other fishing industry spokesmen, and state representatives to a hearing by the House Committee on Merchant Marine and Fisheries regarding bills which proposed the extension of United States fishery jurisdiction to 200 miles. The Sail on Washington had started nearly a week before when fishermen left by boat from Kennebunkport, Maine. They stopped to gather supporters at fishing ports along the coast on the way to Washington--at Rye, New Hampshire; Gloucester and New Bedford, Massachusetts; Pt. Judith, Rhode Island; Atlantic City and Cape May, New Jersey; and Quantico, Virginia. The speeches and sendoffs were particularly elaborate in the ports of New England where Save the American Fisheries, the group that organized the Sail, had been founded and drew its strength. In Gloucester, Massachusetts, Governor Francis W. Sargent told the crowd that "at stake in this Sail on Washington is America's oldest industry." After ceremonies in New Bedford, the "Western Wave" of vessels that had come from farther up the coast and a flotilla of smaller fishing boats, tugs, workboats, and sportfishing boats escorted the "Sharon

and Noreen," the vessel chosen to go all the way to Washington, out of the harbor.[1]

In Washington, the representatives from New England repeated concerns about the condition of the New England fisheries which they had expressed during months of hearings on bills to extend United States fisheries jurisdiction to 200 miles. Maine state representative Elmont S. Tyndale, cochairman of Save the American Fisheries, detailed the plight of the Maine sardine industry and then generalized to the rest of the nation's fisheries. If foreign vessels' overfishing were allowed to continue, he warned, "our fishing industry will be destroyed. . . . our fishermen in the State of Maine implore you to heed this serious situation." State Senator William O'Neill from Rhode Island told the committee that the fishing industry in Rhode Island "is threatened with extinction." Harvey Mickelson representing seafood dealers in New Bedford, declared that "this particular moment . . . is our last chance to prevent a national disaster." Gaspar J. Lafata from the Gloucester City Council predicted that "If something isn't done soon we will probably be back here for a new first, asking for Federal grants for historical restoration . . . so our future generations and tourists can see how fresh fish were caught." Captain Edward Longo, a fisherman from the "Sharon and Noreen" of New Bedford, presented petitions with thousands of signatures which asked for a 200-mile limit. He showed the congressmen the nets of Russian boats that had fished within 200 miles of the U.S. coast. A vessel owner from Gloucester, Walter Curtis, said to the committee, "I brought with me

here a symbol that shows the haddock fisheries of New England. That bloody well is all that's left. There's nothing left of the haddock fisheries of New England. It's been desecrated, it's been ruined, it's gone."[2]

In this hearing and in the many others before passage of the 200-mile limit legislation, the fishermen, other industry representatives, and elected officials talked mainly about the problems of the New England fishing industry after 1960 or 1965 to make the point that the foreign fleets which came to the Georges Bank fishing grounds in the mid-1960s caused the difficulties. Through the 1950s and 1960s, however, fishery groups had come to Congress with many other stories of troubles and with other explanations for their difficulties. The industry's relationship with government had a long history.

Those who testified were right that there were problems in the industry. If they had looked as far back as 1950, they would have seen longer-term decline relieved only by occasional, brief increases in landings. In 1950 New England fishermen landed well over 941 million pounds of fish. In 1960 they landed 783 million pounds. The value of the fish went down as well, from $39.3 million in 1950 to $33.7 million in 1960. At the same time that the value of the fishermen's product declined nearly 17 percent, the value of production of all industries, gross national product, grew by almost 80 percent.[3]

As poundage and value of landings fell, the New England fishing fleet shrank, and the number of fishermen decreased. In 1950 there were 865 boats over five net tons fishing in New England; by 1960 there were

742. In 1950 nearly 6000 fishermen worked on these vessels. In 1960 about 4300 fished from them.[4]

The picture was just as bad for the years after 1960 which fishermen and others described for the congressmen. By 1973, the year before the Sail on Washington, landings of fish were down to 445 million pounds, although that low figure was an increase from the 412 million pounds of 1972. The value of the catch was up from 1960's $33.7 million to $52 million in 1973, an increase in value of about 54 percent, but this did not keep up with inflation and growth in the rest of the economy. Gross national product increased more than one and one half times in the same years. The industry was comparatively worse off than it had been in 1960. The number of boats over five gross tons which brought fish to New England ports was down to 692 by 1973. About 3000 fishermen remained to work on these boats.[5]

The decline in landings, boats, and fishermen affected some of the processors and wholesalers who handled the fish as well; they told about their problems at hearings on the 200-mile limit legislation. Unlike the pattern in the fishing sector of the New England industry, however, changes in the number of processing and wholesaling firms and in processing employment were uneven. In 1950 there were 556 wholesaling and processing plants; in 1960 there were 568; and in 1973 there were 487. Between 1950 and 1960 the number of workers employed in processing and wholesaling declined from 10,753 to 8791 but increased again slightly to 9096 by 1973.

Changes in the volume and value of processed fish were less ambiguous; they increased. In 1950 processors produced about 150 million pounds of fresh and frozen fish and shellfish which brought them about $44 million. In 1960 they processed nearly 190 million pounds worth over $66 million. The value of all processed fish increased by 26 percent; nearly all of the growth occurred in the processing of fresh and frozen fish which rose 50 percent.

Expansion was more impressive between 1960 and 1973. As of 1973 processors were manufacturing more than 375 million pounds of fresh and frozen fish, worth $280 million. The value of all processed fish had more than doubled since 1960 while value of fresh and frozen fish had multiplied about three and one quarter times, much faster growth than the rest of the economy experienced.[6]

These numbers reflected tremendous changes in the composition of the processing industry. Some processors and wholesalers found different sources of fish with which to expand their production. Some of them introduced new frozen fish products, fish sticks, which captured a large share of the market for fish. Others, especially those who continued to depend exclusively on fresh fish landings in New England, decreased in number. Except for this group of processors and dealers, problems in the fishing industry were concentrated in the harvesting sector.

Although testimony at the hearings on the legislation for the extension of fishery jurisdiction rarely mentioned the fact, the federal government and New England state governments had been concerned about

the trouble in the New England fishing industry for more than twenty years and had sponsored many programs to aid the industry. The industry representatives who testified before the House committee during the Sail on Washington continued a lengthy tradition of appealing to government for help in solving their problems. The diagnoses industry spokesmen offered of the reasons for their difficulties and the programs designed to cure the problems changed over time so that by 1974 the reasons cited for problems in the 1950s and early 1960s seemed nearly forgotten. The programs for which the industry had lobbied and which government had put in place in those early years had failed to solve the problems and to turn the industry's fortunes around. Furthermore, as the 200-mile limit went into effect in 1977, it became clear that getting the foreigners off the fishing banks would not solve all the industry's problems. Planning for the rebuilding of the fish resources, required by new legislation, proved remarkably difficult.

The New England fishing industry's efforts are certainly not unique in this country. The representatives of many industries have turned to government for help when they were in trouble. Most commonly, businesses have sought higher tariffs on competing imports, but they have also looked for and often received government loans and subsidies, government contracts, and regulatory protection.

This tradition of government help for troubled industry raises many questions. When does an industry appeal to government for assistance? What are the industry's problems? How do industry representatives'

assessments of their problems compare with the actual problems? Why do they differ? How accurate are industry representatives' evaluations of appropriate aid for their industry? When does government intervention seem warranted? What kinds of help does industry obtain from government and why? How do these types of aid differ from those that the industry most desired and from those most likely to solve the industry's troubles? How effective are programs in solving the problems? Why do programs fail or succeed? What might make these economic development efforts take directions more likely to produce desired results? How might such efforts be more effectively implemented?

This study of the politics and economics of the New England fishing industry from the early post World War II years to 1979 addresses many of these questions. Because government made substantial efforts to aid the fishing industry and because those efforts failed to solve the industry's problems, the fishing industry experience offers an excellent opportunity to examine the nature of industry problems, government aid, and the failures of programs.

The second chapter analyzes the structure of the fishing industry and shows that from 1950 through the mid-1960s the problems of the New England fishing industry were the problems of one sector, the offshore groundfish industry. The groundfish industry suffered declining catches and falling revenues. The number of boats and fishermen declined. Boats operated in the red for the most part, and fishermen's wages fell. Other sectors of the industry were comparatively stable or prospered.

Chapter 3 describes the push by industry representatives for government aid during the 1950s and 1960s. The chapter reviews the campaigns for higher tariffs on groundfish imports and looks at federal programs to increase the demand for groundfish and to reduce the costs of fishing. The chapter reports some of the activities the programs generated, the number of loans and subsidies, for example, and the subjects of research by government-funded scientists. These programs constituted the heart of fishery policy through the late 1960s. Chapter 4 shows why the programs did not work and could not have solved the fishing industry's problems. It looks at implementation of some cost-reducing programs and explains why tariffs and large-scale boat construction subsidies would have made the industry's difficulties worse.

By the mid-1960s large numbers of sophisticated foreign vessels fished the offshore grounds. Chapter 5 discusses the new perceptions of industry problems that emerged in the late 1960s as the foreign fleets contributed to depletion of the fish resource. The chapter looks at the efforts to solve those new problems through multilateral negotiation and explains why these failed to satisfy the fishing industry and to solve their problems. Those efforts culminated in unilateral action, extension of fishery jurisdiction to 200 miles, in the Fishery Conservation and Management Act of 1976.

Chapter 6 examines the early results of the latest effort to solve fishing industry troubles, extended fishery jurisdiction and fishery management programs. The U.S. successfully excluded foreigners from

the fishing grounds, but the domestic management of the groundfish industry suffered severe problems by 1979.

Finally, chapter 7 offers explanations for the failure of government efforts to solve the fishing industry's problems. It looks at the implications of the fishing industry experience for government policy towards industry in trouble.

CHAPTER 2

STRUCTURE AND PROBLEMS OF THE FISHERIES

As World War II ended, New England fishermen, dealers, and processors could look back on fifteen years that included some of the worst and the best times the industry had ever known. The Depression had been especially hard. In 1931 landings of fish in New England ports fell to 540 million pounds, nearly 200 million pounds less than in 1930; and the value of the catch declined from $27 million to $20 million. By 1933 fishermen landed only 500 million pounds of fish, and the revenue they received declined even more, to $13 million. A crewman on a groundfish vessel who did not receive bonuses for special duties, earned only about $600 in 1933. A worker on a mackerel seiner reported about $300 in wages in New England fisheries, although he probably doubled that amount by fishing in the South during part of the year. All others paid on a share basis earned about $680. Fishermen earned less than full-time employees in most other industries. Workers in manufacturing earned an average of more than $1000 in 1933, for example. Wholesale and retail employees earned nearly $1200. Farmers and domestics were the only major groups of workers who received less than fishermen on average.[1]

The early part of the Depression was hard for everyone. News reports and fishermen's efforts to do something about their problems

showed what these statistics meant. Atlantic Coast Fisheries, one of the largest boat operators in the region, kept its trawlers tied up for most of the summers of 1931 and 1932, the best weather for fishing, because prices were so low that revenue could not cover trip expenses. The particularly severe poverty of fishermen in Maine, the lobstermen's shanties, and their families' listlessness shocked observers.[2]

Gloucestermen called attention to their problems again and again. In October 1932 the Gloucester Chamber of Commerce applied to the Federal Reserve Board on behalf of Gloucester fishing vessels for loans from the Reconstruction Finance Corporation. They described the collapse of traditional credit arrangements with suppliers of vessel materials: "The situation today of Gloucester fishing vessels is that because of the low prices which have obtained for fish during the past 2 years, it has been impossible for the owners to pay the material men, not to speak of the seller of the engine, or the builder of the boat. . . . The danger which now appears to be imminent is that creditors of the material men will push so hard for payment, that the material men in turn will try to realize money on numerous of their bills against the fishing vessels. This means the enforcement of the material men's liens against the fishing vessels, and the offering of the vessels for sale at public auction. . . . there will be a chaotic condition in the industry."[3]

In April 1933 the Gloucester vessel "Gertrude L. Thebaud" carried New England industry representatives to Washington, D.C., in the first "sail on Washington." They presented to President Roosevelt and Congress

a "Statement Setting Forth Serious Situation Confronting Fishermen, Captains and Vessel Owners at the Port of Gloucester, Massachusetts." Income from fishing trips, they demonstrated with graphic examples, did not cover operating expenses even when wages and overhead were not included.[4]

In 1934 vessel owners from Gloucester testified that they had tied up their boats because they could not afford to go out. Others fished without insurance and used worn, unsafe gear in order to cut costs. They asked for farm credit to pay for gear replacement and repairs because former creditors had gone out of business and those who remained demanded cash.[5]

A few years later the wife of a Gloucester fisherman described the "deadly years of the depression." A gillnetter,[6] she said, made an initial investment of $30,000 for a boat and gear and then spent $80 to $125 per week for operating expenses, but, "One boat has shared $7 for about ten weeks' work. It cost another $276 to catch $250 worth of fish."[7]

By this time, 1937, however, larger boats in Gloucester, trawlers rather than gillnetters, which could go farther offshore were doing better by serving new demand in the Midwest for redfish, marketed as frozen fillets of "ocean perch." Gloucester redfish landings jumped from zero in the early 1930s to seventeen million pounds in 1937. In Boston, new vessels using diesel power and otter trawls brought in profitable trips while the older steam vessels still could not. Fishermen could earn several times more money on newer boats than on the old. In general by

the late thirties, Boston fishermen earned low wages compared to all other workers, but these were not notably out of line. Forty-four percent of the fishermen who lived in Boston earned more than $1000 in 1939; 27 percent earned more than $1400. Laborers in manufacturing and construction and service workers did not do as well. Firemen, policemen, and operatives in manufacturing did better. Unemployment was still high. In Boston 213 fishermen looked for work while 958 had jobs.[8]

Boston vessel owners and dealers probably were recovering by the late 1930s, too. Thirty of the larger vessels operating out of Boston in 1947 had been built between 1930 and 1941 which reflected optimistic assessment of the income prospects for new vessels. During the 1930s stores on the Boston Fish Pier remained in demand, and the Boston Fish Market Corporation which rented pier buildings to dealers increased its surplus account between 1931 and 1939.[9]

In New Bedford fishing interests introduced flounder filleting in 1938. The year before, the city had opened a freezer for fish freezing and storage. The New Bedford industry expanded for the first time since the decline of whaling in the nineteenth century.[10]

The recovery remained uneven, however. As late as 1939 when other fishermen were doing better, 80 percent of Maine fishermen earned less than $1000 in a year; nearly 84 percent earned less than $1400. Other Maine workers were better off; only 35 percent earned less than $4000, and only 21 percent earned less than $1400.[11]

Fishing Industry Fortunes During World War II

The improvement in the fortunes for some groups during the second half of the 1930s paled in comparison with the tremendous increase in income throughout the fishing industry as World War II began. Even before the United States entered the war, the conflict in Europe stopped shipment of sardines to England from Portugal and Scandinavia. The Lend Lease program bought a record sardine pack from the Maine canneries in 1941 for transport to Europe. Maine lobstermen caught more lobsters, and prices of lobsters rose. The New Bedford landings of flounder and sea scallops increased so that the city again took a leading role in the country's fishing industry. The Navy bought fifteen larger trawlers and ten smaller vessels from the New England fleet, but the largest vessel owners set out to replace them quickly. General Seafoods put four new vessels into service out of Boston; Booth Fisheries launched one new vessel and planned for another; F. J. O'Hara contracted for ten new boats for Boston; and O'Brien's was building four. The change had an effect on the incomes of some fishermen. A few New England fishermen made as much as $3700 in the first nine months of 1941, and some captains were expected to earn $17,000 to $20,000 by the end of the year, according to one source.[12]

As the war began, several changes cut back the harvesting capacity of the New England fleet. The Navy appropriated many of the largest boats for minesweepers and patrols. By one account, the New England fisheries

lost 76 of its largest vessels to the Navy by mid-1942. According to another, the government had taken 107 boats by the end of 1942 out of a 1941 total of about 540 vessels over 40 feet. Enemy submarines off the coast made fishing dangerous on the offshore fishing banks for the boats that remained. German submarines sank three Boston fishing trawlers within the first year of the war. Many boats that did venture to offshore banks worked in convoys. Material shortages interfered with the activity of other boats. At the beginning of 1943 many Gloucester vessels tied up because they could not get new engines. The shortages were most acute in equipment and vessels; but, in addition, vessel owners occasionally had trouble finding crew. The government prevented Italian fishermen in Gloucester from going out on boats if they neglected to apply for United States citizenship.[13]

At the same time that harvesting fish became more difficult, demand for fish increased. The Army and the Lend Lease program purchased practically all canned fish. Civilians who could not obtain meat looked for fish. The combination of increased demand for the harvest of a smaller number of boats guaranteed higher prices and incomes.

In spite of cuts in harvesting capacity, New England fishermen landed more fish. Landings increased from 626 million pounds in 1940 to 705 million pounds in 1942, went down to 645 million pounds in 1943, and rose to 714 million pounds in 1944. The value of the fish rose more dramatically. Revenue from landings more than doubled from 1940 to 1943 while the quantity was only 20 million pounds more than in 1940.

The price at the dock of the most popular species of fish soared. Haddock sold for an average of four cents per pound in Gloucester, Boston, and Portland in 1940. In 1943 dealers paid nearly ten cents per pound. The price of large cod rose from nearly four cents per pound in 1940 to ten cents in 1943; yellowtail flounder increased from nearly two cents to seven cents per pound; and redfish went from one and one half cents to four cents. In addition, species that had never been marketable before were in demand as food and brought in additional income. Maine fishermen had always used mussels as bait but now found they could sell them for food. Mainers had processed bony alewives as fertilizer and feed for hogs and hens but could now earn more by canning them for human consumption.[14]

Incomes in the fishing industry shot up. "Captain Courageous has hit the jackpot," one reporter proclaimed. Many Gloucester skippers made $20,000 in 1942, he said, and each member of the crew made $6000. One captain seining for mackerel made $9940 in five months, and his fourteen crew members made $4262 each. Gloucester skippers bought the best houses in town for cash. Ivar Carlson, a Boston captain, risked submarine dangers to fish offshore and earned $10,960 for himself in eight and one half weeks in early 1943. Each of his crew members earned $3500 in the same period. In July 1943 crewmen from one Boston boat each earned $450 for a five day trip.[15]

More complete accounts of fishermen's incomes showed less dramatic earnings but added evidence of tremendous prosperity in the

industry compared with several years before. In Gloucester in 1942 the "highline" redfish dragger, the boat in the redfish fleet which earned the most money for the year, paid each crew member $5895. The highline Gloucester dragger for 1942 paid each crew member $7625 from sale of haddock, cod, pollock, and redfish. Even as upper limits these numbers are impressive since in Massachusetts in 1939 only 68 fishermen out of nearly 4500 identified by the census reported earning over $2500. Fishermen on medium draggers, between 50 and 150 gross tons, fishing out of Gloucester, Portland, and Boston in 1941 earned an average of $2272; in 1942 each fisherman earned $3853; and in 1943 $6168. The crew on smaller draggers, less than fifty tons, which fished nearer shore and could not work in bad weather, earned less--an average of $1805 in 1941, $2805 in 1942, and $2852 in 1943. Late in 1944 men working on large trawlers and on draggers could earn as much as $16,000 per year compared to a prewar high of about $2500 per year. Fishermen on the small boats of the inshore fleet could earn $6000 per year compared to a high of $1200 before the war.[16]

Beginning in July 1943 the Office of Price Administration (OPA) set ceilings for fish prices at the dock and margins for dealers. Fishermen and dealers argued with each other and with OPA about the shares each group should have in the general prosperity. The union which represented fishermen in the major ports threatened a strike if dealers did not pay the ceiling prices for fish at the dock, and fishermen did strike for several months in late 1943. Dealers claimed that the small margin

which OPA allowed would put them out of business. Spokesmen for the industry criticized OPA for not understanding that the markets in different ports had different cost structures and had to be allowed different ceilings and markups.[17]

Protests notwithstanding, the dealers prospered, too. In Gloucester about one half the twenty dealers in business in 1949 had started operations during the war. Five of the firms operating between 1942 and 1946 increased their combined surplus accounts by 121 percent in that time. In New Bedford the number of dealers more than doubled between mid-1943 and mid-1944. Dealer margins set by OPA were 150 percent over the prewar level. In Boston seventeen dealers increased their combined surplus account from $935,000 in 1941 to $2,200,000 in early 1947.[18]

Expectations for the Post-War Period

The wartime prosperity generated tremendous optimism about the prospects for the postwar fishing industry. Vessel owners showed their evaluation of the future in enormous investment in new boats. Despite wartime shortages, from 1940 through 1944 boatbuilders supplied 238 new vessels more than forty feet long to the New England fleet, 128 of them in 1944 alone. Owners had converted ten more vessels from other uses. Although the government never returned 78 of the boats taken for war use, 141 more vessels over forty feet long fished out of New England

ports by mid-1944 than in 1940. Compared with a total of about 540 boats over forty feet long which fished out of New England ports in 1941, the increase was substantial.[19]

Individuals and groups connected with the industry made extravagant statements about the postwar prospects. "The fishing industry, as a whole, is destined to enjoy a steadily increasing demand for its products, as a result of the public becoming better acquainted with the fine qualities of fish and shellfish, through the scarcity of previously more familiar foods," proclaimed the editors of a magazine for fishermen, boat owners, and dealers. The demand for quick-frozen fish would "not only take up present productive capacity that was increased to fill war-time needs, but will provide an outlet for still larger catches in the future," another observer believed. "In fact, it is possible that with the great expansion of the frozen food business, fish consumption could be increased to two or three times its present level."[20]

Studies by government agencies of the postwar outlook for the fisheries fed the optimism. Fish would be marketed farther inland as well as in coastal areas, a Department of Agriculture report concluded. "'Quick freezing will revolutionize the marketing of fish,' said Charles E. Jackson, assistant deputy coordinator of fisheries. 'Fishing vessels will dress, freeze, and package fish at sea, arriving in port with a high quality product ready to market. Air transportation will carry ocean fish and shellfish to interior communities within a few hours' time.'"[21] All this would be to the advantage of the New England industry.

Occasionally industry representatives hedged their predictions. When postwar prices for lobsters declined, some believed, lobstermen would lose money unless innovation could lower costs of fishing and enable lobstermen to work traps year round. In May 1945 when the House Ways and Means Committee debated a bill to reduce tariffs 50 percent, one industry spokesman warned that with lower cost of living and with government subsidies for production, Iceland, Greenland, and other north Atlantic countries could undersell New England producers and "drastically affect the fishing industries." "It is urgent," he said, "that some plan be developed and adopted which will provide for sharing of our markets with our neighbors to the extent consistent with the maintenance of operations in our own industry but not beyond." Other voices warned that the fishing industry had to pay attention to the quality of the product or postwar demand could fall much more than might be expected: "Now is the time when impressions are being formed as to the palatability, variety, and ease of preparation of seafood."[22]

Unrealized Hopes: The Industry from 1945 to 1965

During the twenty years after the war the fortunes of the fishing industry did not justify the optimism about postwar prospects. By 1950 falling revenues had shattered those hopes. Everyone did not share equally in the difficulties, however. Some parts of the industry did fulfill the expectations, although a large group did not. To understand how this

was so, one needs to look at the character of the fishing industry, examine its diversity, and consider the changes between 1945 and 1965 in its different sectors.

The New England industry has always been diverse; few generalizations apply to all. Fishermen see these differences as important. "We're really two industries," Bob Rose, owner of a large Gloucester boat, told the New England Fishery Management Council and Washington officials overseeing fisheries.[23] His words summarized reasons for months of argument between inshore and offshore fishermen about the Council's groundfish plans. In other situations Rose would have had to enumerate even more sectors; and individuals with different points of view might have listed still others.

The critical similarity among groups of fishermen is that all harvest fish. The agencies in Washington which have collected fisheries statistics since the last century, first the Fish and Wildlife Service, then the Bureau of Commercial Fisheries, and recently the National Marine Fisheries Service, have focused on this similarity rather than on economic and social differences. Their data describe the fish caught far better than the industry which has harvested them. As a result, information about what happened to different sectors of the fisheries from 1945 to 1965 is usually unavailable except when only one group harvested all of a species of fish.

The most important divisions in the fisheries since World War II have been the inshore and the offshore industries. These groups have

differed along every social and economic dimension, and their experiences have diverged.[24]

Character of the Inshore Fisheries[25]

The inshore fishery is composed of boats which are not seaworthy enough, which usually means they are too small, to fish the offshore banks except occasionally during the best weather in the summer. Fishermen say that generally these are boats which displace less than sixty gross tons. Technological change did not alter this general size limit after World War II, but improved navigational aids and depth sounding equipment increased the number of fishing days and enabled some boats to travel farther. With this new equipment, for instance, smaller boats could fish in fog and return to port when the captain could not take his sights by points on land. The discussion that follows lays out a general view of inshore fishing that is valid in most respects from World War II to the present.

Immediately after World War II the number of inshore boats increased, but beginning around 1950 the numbers declined. In 1946 about 12,500 inshore fishing boats worked in New England. Almost all were extremely small. About 540 displaced between five and sixty gross tons. The rest were less than five tons; more than 5000 of these did not even have motors. By 1950 the numbers were larger: about 13,800 inshore boats fished from New England ports, but only 600 were larger than five tons. Through the 1950s the number of inshore boats declined.

By 1960 about 12,500 inshore boats fished in New England; about 475 were larger than five tons. In 1965, 420 inshore boats between five and sixty tons landed fish in New England, and about 10,800 smaller ones did so.[26]

Parts of the coast did not share equally in fishing activity. Maine and Massachusetts coastal waters supported far more inshore boats than any other areas. About 54 percent of the New England inshore boats fished from Maine in 1950, 30 percent from Massachusetts. Rhode Island also had a large number of boats but far fewer than Maine or Massachusetts, 11 percent of the total. In Connecticut and in New Hampshire with its very small coast, inshore fishing was fairly unimportant. Connecticut had 5 percent of the inshore boats in 1950; New Hampshire had 2 percent. These shares did not change much as the total numbers of fishing boats declined except that Massachusetts's share of boats climbed to about one third of the total, and Connecticut's share declined.[27]

It is harder to say how many fishermen worked inshore, but they probably declined in number after 1950, too. In 1946 about ten thousand fishermen earned nearly all their income on inshore boats. Another nine thousand earned less than one half their income in fishing. In 1950 nearly eleven thousand fishermen earned most of their income inshore, and more than eighty-five hundred worked part time and earned less than one half their income. By 1960 the numbers had fallen to something over nine thousand fishermen who depended on fishing for nearly all their earnings. By 1965 about seven thousand fishermen earned most of their

income fishing, and about ten thousand worked more casually.[28] The part-timers held other jobs and probably would not have called themselves fishermen. Large numbers of them fished on weekends and during vacations to make extra money and for enjoyment. The discussion that follows focuses on the individuals who depended more heavily on fishing for their livelihood.

The size of the boat makes every difference in fishing. This was as true in 1945 as in 1965 and 1979. The smallest inshore fishing boats, the majority, rarely work more than a few miles from land. At the other end of the inshore range, those boats closer to sixty tons go far offshore in good weather. Usually these larger boats and those slightly smaller ones make two or three day trips when weather is good, but fish closer to shore in winter or do not go out at all. The limits on boats' activity imposed by the ocean and the weather have always been major themes of inshore fishermen's lives. Those who challenge the limits attract attention. Chatham fishermen spoke with interest and some respect of a young fisherman who regularly took too small a boat to the areas where bigger boats fished and came back with large catches. Another Cape fisherman volunteered that he worked the edge of Georges, not just in the summer. A Gloucesterman said he stayed in after mid-November: "I have a family. It's not worth it. Maybe someday the money will be more important, but not now."[29]

The style of fishing imposed by the character of the boats has had implications for the markets the fishermen serve, the skills a successful

fisherman must have, the location of ports, and the possibility of owning a boat. Because the boats make short trips, the fish they land have usually been out of the water less than a day. Even when properly gutted and iced, fish deteriorate rapidly. Distributors consider fresher fish more desirable so these fish bring the highest prices. Local dealers truck them to New York and to Boston for distribution for consumption as fresh fish, or, less often, fishermen and dealers peddle the catch in restaurants and stores for sale as fresh fish in their coastal communities.[30]

Fish migrate inshore and offshore and along the coast through the year. Because their boats are small, inshore fishermen cannot follow the fish; they harvest the fish available near shore when weather conditions permit. Chatham fishermen explain, for instance, that they switch to quahogging from longlining when the dogfish migrate inshore and eat the bait and the hooked cod off the lines. In Maine, fishermen begin to harvest cod in late March as the weather moderates and the fish move closer to the coast. These changes impose an annual cycle of movement from one fishery to another on the inshore fishermen.

Catching different kinds of fish and shellfish frequently requires changes in gear. Inshore fishermen use otter trawls or line trawls to catch cod, haddock, and flounder; but they need otter trawls with finer net mesh to catch whiting, dredges to harvest scallops, seines to capture herring, and traps to bring in lobsters. Because he has to change fisheries, the inshore fisherman needs to change gear without too much expense, and he needs a boat designed to handle different kinds of work.

Decisions about shifting the direction of fishing effort and about changing gear are not just based on weather and on fish migration; fishermen assess market prices as they decide to look for different types of fish. Point Judith, Rhode Island, fishermen protested that if fisheries were managed by allocating a share of a year's quota of cod, for instance, to each vessel already in the fishery, Point Judith fishermen would be hurt because they could no longer move into groundfishing when the price for scup or butterfish or some other species fell. This flexibility kept them in business as a small-volume fishery, they claimed. These kinds of changes do not make annual cycles as do responses to fish migration and weather. Phil Schwind, a fisherman on Cape Cod, geared up for scalloping in some years, handlining haddock in others, and so forth. Charlie York, on the Maine Coast, worked a fish trap for a while, then invested in seines for herring fishing for the sardine industry, and then moved into lobstering.[31]

Almost always, decisions to look for different kinds of fish take account of weather, availability of fish, and price, but work preferences also play a major role. As a Martha's Vineyard fisherman said, "It's a little like playing horses. . . . You're always looking for the big tow." He fished for squid with hopes of selling big catches to the Spanish market, but did not bring in enough to make it worthwhile. "Someone mentioned it, and now we know there's nothing there, so we won't have to worry about it. We'll rig up for scallops now," he explained. If the money is better, scalloping is worth the culling and shucking involved,

he said, unpleasant tasks avoided in fishing for squid. A Maine fisherman described his decisions: "You quit shrimping because the shrimp disappear, usually around the tenth of April. And then you've got your choice: you can either go dragging for fish, or you can go spring lobstering, which is a short season. Now, I could keep dragging all summer if I wanted to, but I prefer to go lobstering then, because there's more money in it, and besides after you've been dragging all winter, you kind of welcome a change anyway."[32]

Skills in understanding the movements of the fish, in calculating the price fish will bring when landed, and in deciding when to move to another fishery are major components in an inshore fisherman's financial success. Another extremely important factor is his knowledge of the fishing grounds. He needs to know the location of different types of bottom and of rocks and wrecks in order to drag a net successfully or to lay traps. He has to know exactly where fish are likely to be at different times; he has to know the patterns of fish behavior. He has to "know the grounds, all of them, as well as a taxi driver knows a city," one writer believed who went on numerous trips with inshore fishermen.[33] Perhaps a more valid simile would be as a blind person knows his town because fishermen never see the bottom and rarely the fish so they learn by watching other fishermen, by working as crew with a skillful captain, and by trying and making mistakes. This knowledge has become less important in some ways since World War II with the introduction of fishfinders, loran,[34] and fathometers, but large numbers of small boats did not have these instruments by 1965,

and the smallest ones still do not.[35] As fish stocks have become depleted, some fishermen say, electronic equipment in combination with extensive knowledge of the grounds are needed to make a good living.

Acquiring these skills is a way inshore fishermen can control their incomes because incomes are a share of the revenue from the catch, but other factors impinge as well. The character of the market in the ports where the fishermen land fish influences fishing revenues. Since the boats are small and make short trips, they land small quantities of fish, at least small compared with the landings of large vessels. The amount of fish and the size of the boats require simple dock facilities, and a few dealers can handle the landings. Fishermen sell their fish in a large number of small ports which can meet these needs, Chatham, Provincetown, Menemsha, and Scituate, Massachusetts; Point Judith, Rhode Island; Stonington, Connecticut; and a number of others, as well as in the larger ports of Boston, Gloucester, and New Bedford, Massachusetts; and Portland and Rockland, Maine; where the larger offshore boats dwarf them. Fishermen land lobsters and shellfish in most rural communities along the coast. Almost without exception, the fishermen in the smaller ports have decided that the one or two dealers profit by holding fish prices down. Fishermen have started cooperatives in many of these communities. Chatham Seafood Cooperative members remember an "intolerable situation" with the one dealer before they started their coop. Where coops have survived, most fishermen believe they provide

higher prices for fishermen, although they tend to believe that the coop could get them even better prices.[36]

Small boats can require very little capital investment, although older fishermen quickly point out that the cost of a boat went up considerably in the decades after World War II. A young fisherman can still get started with little more than a skiff, and many do. Large numbers of small boats carry no crew besides the captain-owner, but more commonly on the larger boats that work inshore up to three crewmen join the captain. Because inshore boats cost relatively little and take small crews, many fishermen own their boats. Almost all who stay in fishing for any time do own their boats and usually own several during their lives. The possibility of owning a boat is very important to inshore fishermen. The desire to own a boat and love of their boats are among the most universal feelings inshore fishermen express.[37]

The character of boat ownership in the inshore fisheries means that many fishermen run small businesses. Their families are often involved in making the business a success. Wives often take care of shore business to increase the time fishermen can spend on the ocean. They keep accounts; they shuck or clean the catch; they sell the fish to retail outlets when the price from a dealer seems unsatisfactory; and they may provide their husbands with transportation between home and the ports where they can dock. Wives may take political action on fishing issues. Sometimes they go fishing with their husbands as well, but that is unusual, except when the fishing is on the shoreline, such as quahogging

or bay scalloping. Children in the family, usually the boys but occasionally girls, too, begin to crew for their fathers before they reach their teens. Most boys get their training in fishing by working on their fathers' boats in vacations from school. Large proportions of inshore fishermen had fathers or uncles who were fishermen with whom they began fishing. As a result of all these factors and others, some anthropologists argue, when inshore fishing is the dominant occupation in a town, the social structure is distinctive.[38]

Inshore fishermen respond to fish migration, market conditions, and preferences for different kinds of work in deciding which fish to catch, but that flexibility should not be exaggerated. Geographic location of the ports from which fishermen work limits the types of fisheries they can enter. Ocean temperatures and currents and the character of the ocean bottom influence which species of fish and shellfish survive and their abundance.[39] As a result, fishermen usually work in certain types of fishing more than others.

In addition, many inshore fishermen feel more strongly connected with certain kinds of work. Even though Fred Boynton working on the Maine coast looked for groundfish or for shrimp for a large part of the year, he called himself a lobsterman. Other fishermen use time when they cannot fish for certain species as opportunity to build their traps, knit their nets, or overhaul their boats. A few others look for onshore jobs instead of changing fisheries, although this is less common and is usually difficult because other sources of employment in the coastal

communities, tourism and fish processing, for example, hire people in the same seasons when fishing is best. Lobstermen may be especially tied to the lobster fishery. Their lobster boats become increasingly specialized for the work of hauling traps with more and more efficient arrangement of work space. As a result, the boat design and the work space are not as useful for other types of fishing.[40]

Trends in the Inshore Fisheries: 1945-1965

Because most fishermen are more attached to certain fisheries than others at any time, the changes in different parts of the inshore industry between 1945 and 1965 affected them. Major sectors of the inshore industry have fared very differently since World War II. Some sectors justified the post World War II optimism while others did not.

1. Herring

Fishermen who trapped herring for the sardine industry lived along the Maine coast where the small herring run inshore from April through October. Maine fishermen caught 95 percent of the herring landed in New England in 1950. The major methods of harvesting herring depended on trapping them in weirs or with stop seines[41] as they entered bays or inlets, concentrating the trapped fish with other nets, and scooping the fish into small boats. Over 1100 fishermen working weirs and stop seines caught 90 percent of herring in Maine in 1950.

By the 1960s some fishermen used purse seines to capture herring. With purse seines they could circle a school of fish farther from shore, tighten the net around the fish, and bring the fish into a boat. The purse seine method meant fishermen did not have to depend on the herring to run inshore and could fish for them in the winter as well. As of 1965, however, stop seines and weirs still caught more than 80 percent of the catch in Maine, and purse seines only about 17 percent. The Maine catch still accounted for close to 95 percent of total New England landings.[42]

The catch of herring in Maine fluctuated considerably in quantity and in value, from 92 million pounds valued at $1.2 million in 1945 to 185 million pounds worth $1.3 million in 1950 to 60 million pounds which brought less than $1 million in 1951. Between 1952 and 1960 the catch varied from 100 million pounds to 171 million pounds. In 1961 the herring failed to show up in the inshore grounds, and the effects were "disastrous," according to James Warren who has worked in the sardine industry since World War II. Landings fell to 54 million pounds worth about one million dollars. Even though the catch increased to close to old levels for the next two years, the herring industry has never recovered according to Warren. As of 1965 about 690 fishermen landed only 70 million pounds of herring worth a little over one million dollars.[43]

2. Lobsters

Fishermen in Maine and in Massachusetts depended heavily on lobsters, too, from the postwar years through the mid-1960s. Lobstering is usually best from April or May through October or November when

the lobsters appear in most abundance inshore, but residents of offshore islands have had a profitable winter lobster fishery, too. Lobstering slows during shedding periods in the summer when lobsters lose their old shells, have less endurance, and provide less meat.[44]

Lobstermen used wooden traps of various designs which had an opening with a net which allowed the lobster to enter a "parlor" in the trap to eat the bait but which kept it from escaping. Usually a large number of traps are set out on a line, or "trawl," with buoys as markers.[45]

The catch of lobsters increased after World War II from about 18 million pounds in Maine valued at $7 million to a high of 24 million pounds worth $11 million in 1960 and declined to about 19 million pounds worth $14 million by 1965. The catch of lobsters for all New England rose from 23 million pounds in 1946 to more than 29 million pounds valued at more than $13 million in 1960 to somewhat over 28 million pounds worth almost $21 million in 1965.

Between 1945 and 1965 the number of lobster traps and the number of lobstermen increased tremendously. Lobstering attracted particularly large numbers of fishermen who earned most of their income in other ways. In 1945 nearly 4200 lobstermen handled almost 356,000 traps. By 1960 almost 6600 lobstermen hauled nearly 710,000 traps. In 1965 the number of fishermen had declined slightly to 5800, about 2700 earning less than one half their income in fishing, but they used nearly 790,000 traps. Introduction of hydraulic winches made it possible for one lobsterman to haul hundreds more traps.[46]

The increase in effort in lobstering, the increased number of traps fished, at the same time that catches stabilized or declined reflected the depletion of the lobster stock. Even before the 1950s Maine and Massachusetts introduced rules about the size of lobsters that could be sold and prohibited sale of egg-bearing lobsters to try to conserve the resource. Lobstermen's associations pushed for regulations that would make dragging for lobsters impossible, because, they said, dragging would destroy the resource by catching too many and by seriously injuring others which were too small or carried eggs. Some lobstermen also made it hard for newcomers to enter the fishery by cutting off gear they set out. All the same, large numbers entered and exited from lobstering. One out of six lobstermen turned over every year, and when questioned about part-timers, lobstermen replied, "Anyone . . . has as much right as the next fellow to catch lobsters," or "I certainly wouldn't say the little fellow should be curbed at lobstering just because he's little."[47]

3. Shrimp

Maine inshore fishermen dominated shrimping as well in the post-war years. In 1945 Maine fishermen caught virtually all shrimp landed in New England. The shrimp season, the end of January to mid-April, coincided with the poorest fishing times for lobsters and herring so many of the shrimp fishermen came from those fisheries. To capture shrimp fishermen used otter trawls, cone-shaped nets dragged along the bottom of the ocean with floats at the top of the net, enormous wooden "doors"

to hold the sides of the net apart, and weights at the bottom of the net's opening.

Fishermen landed the largest amount of shrimp in 1945. About 31 shrimping boats harvested 580,000 pounds worth $29 million. This peak came after six years of market development and build-up of processing capacity which allowed fishermen to sell the shrimp they could catch. In 1946, however, the shrimp harvest fell to 162,000 pounds, and the fishery was virtually defunct by 1949 when fishermen landed only 9700 pounds of shrimp. Beginning in 1946 fishermen could not locate the large masses of shrimp that had been common the years before. By 1949 only twelve boats fished intermittently for shrimp.

The shrimp fishery developed again in the 1960s when shrimp reappeared in large numbers. The fishery grew much larger than it had been in the late 1940s. By 1964 shrimpers harvested 925,000 pounds of shrimp, as Maine Department of Sea and Shore Fisheries officials worked again with processors and fishermen to establish processing capacity and consumer demand. The wild fluctuations in the fishery seemed due to biological factors as much as to economic ones. Biologists suggested that shrimp were particularly sensitive to water temperature and that slight warming of the water killed them in large numbers.[48]

4. Whiting

Inshore fishermen from southern Maine and from Massachusetts, primarily Gloucester, fished for whiting, or silver hake, valued for food and for industrial purposes, fertilizer, animal foods, and fish protein

concentrate. Fishermen brought in almost all the fish with "draggers," smaller boats equipped for otter trawling. Whiting congregated inshore from May through November with the best catches between June 1 and mid-October. Before the 1940s fishermen considered whiting a nuisance fish to be discarded at sea, but as methods of handling, processing, and distribution improved, consumers in the South and Midwest ate more whiting. Landings of whiting rose from 78 million pounds worth almost $2 million in 1945 to a high of 126 million pounds valued at $2.2 million in 1957. Gloucester fishermen brought in more than 60 percent of that total. By 1961 thirty-five small otter trawlers as well as some medium trawlers that could have worked farther offshore fished from Gloucester for whiting. In 1957, 1959, and 1960 whiting was the most important food fish landed in Gloucester. In Provincetown, whiting became the leading species. In Portland, Maine, small otter trawlers made whiting the second most important species in the port. By 1965, however, the whiting catch was down to 75 million pounds valued slightly under $2 million.

As landings declined, fishermen argued over which boats should work the inshore grounds. In 1961 the Maine legislature passed laws that excluded larger trawlers from waters off Portland. Smaller Gloucester boats could not make profits in such long trips so the Maine fishermen gained control of the Maine coast whiting fishery.[49]

5. Groundfish and Flounder

When whiting stocks were less abundant, when whiting prices fell, or when whiting were farther offshore, the draggers turned to flounder and to other groundfish such as cod and haddock. On Cape Cod and the south shore of Massachusetts, inshore fishermen also sought groundfish and flounder with otter trawls. Many inshore fishermen, but especially those in Chatham, used line trawls, also called longlines or tub trawls, instead of otter trawls. These trawls were lines several hundred yards long with baited hooks suspended along them, a method left over from dory fishing from schooners before the introduction of otter trawls. Line trawlers could fish rocky grounds that would tear trawl nets. Fishermen set the lines, a type of "fixed gear," over an area of ocean and returned some hours later to take the fish.[50]

Fishermen used another type of fixed gear, the gillnet, in southern Maine and along the Massachusetts coast north of Cape Cod. They suspended gillnets in the water with floats at the top and weights at the bottom. Fish swam into the nets and were caught in the mesh. As with line trawls, the fishermen returned to the nets after a period of time, a few hours to a couple of days, to take the fish and reset the net.[51]

From New Hampshire to southern Massachusetts fixed gear fishermen disputed with draggermen and with each other over who could fish where. Fixed gear fishermen claimed that draggers towed through their gear and cut their lines causing thousands of dollars worth of damage, and

they insisted that dragging operations were responsible for taking fish they might have caught. Draggermen accused fixed-gear fishermen of "hogging the ocean."[52]

Exactly how much groundfish the inshore fishermen harvested with draggers, line trawls, and gillnets before 1965 is not known because the statistics report landings of all groundfish, and many of these were from offshore boats. In 1965, however, inshore fishermen brought in almost twenty million pounds of cod and haddock valued at $1.7 million. This made up 11.6 percent of the total New England catch of cod and haddock.[53]

6. Scallops

Cape Cod fishermen depended for part of their income on sea scallops on grounds to the south and east of the Cape. Fishermen harvested scallops with a dredge which they scraped along the ocean floor. Demand improved through the early 1960s so catches increased and then decreased as the resource was depleted. In 1965 inshore fishermen caught two million pounds of sea scallops worth over $8 million. This was 18 percent of the total New England scallop harvest.[54]

7. Southern New England Species and Industrial Fish

Cape Cod fishermen also brought in large numbers of other species of fish which migrated to southern New England waters in summer, such as scup, butterfish, and fluke, and still others such as tilefish that lived in New England water all year round. Rhode Island and Connecticut inshore fishermen depended on these species as well. Most of these fish

were more attractive to the New York market than in New England. Fishermen caught these fish by dragging, longlining, or trapping. Most of the trappers were Rhode Island fishermen. They used traps which operated on the same principles as weirs. The trappers' major aim was to catch scup which came inshore from April through June.[55]

Inshore fishermen from Gloucester, New Bedford, and especially Point Judith, Rhode Island, relied on otter trawling for low-value industrial or "trash" fish for substantial parts of their income from May through September or October. In Gloucester whiting contributed to the industrial fishery. In the rest of New England red hake was the major species with smaller amounts of whiting, skate, and some others. Point Judith developed the strongest industrial fishery after 1950 under the fishermen's cooperative's leadership. By 1957 industrial fish amounted to 90 percent of weight of Point Judith landings and declined slightly in importance after that.[56]

8. Shellfish

Fishermen from Cape Cod, Martha's Vineyard, Nantucket, and Rhode Island relied on shellfish for an important share of their incomes. In fall or spring when bad weather prevented longliners, lobstermen, and others from taking their boats to sea, they raked or dredged for shellfish in the bays and ponds. A few fishermen "quahogged" full time. During the bay scallop season, beginning in October or November, many fishermen turned to scalloping for a few weeks because the prices were so high.[57]

The shellfish landings declined with depletion and pollution of the beds. In 1950 landings in Massachusetts and Rhode Island of quahogs (hard clams), soft-shelled clams, bay scallops, and oysters amounted to about 8.6 million pounds. By 1965 the catch had declined to about 4.8 million pounds. Quahogs made up the bulk of the harvest, nearly 50 percent in 1950, more than 60 percent in 1965.[58]

Conclusions about the Fortunes of Inshore Fisheries, 1945-1965

As this discussion of some of the major characteristics of the inshore industry demonstrates, fisheries that depended on different stocks changed in different ways between 1945 and 1965. Some, lobstering most notably, expanded; others, herring, for example, contracted; and others, shrimp and whiting, expanded and then contracted. These trends do not show what happened to fishermen, however, because they moved from one fishery to another.

Fragmentary information suggests inshore fishermen were comfortable financially. Fishermen's wages were "about the level of a semi-skilled worker" after 1950, said Dan Arnold, a fisherman and director of the Massahcusetts Inshore Draggermen's Association. They earned about $7000 per year in 1960, he remembered. A group of high-income boats in Pt. Judith, Rhode Island paid a crew share well over $9000 in 1964, one study showed. A group of low-income boats provided a crew share of just over $6000. These earnings compared very favorably with the average earnings of a full-time manufacturing worker in 1964, $6196.[59]

Throughout the 1950s and 1960s, Arnold said, men sought sites and captains easily found crew. Point Judith fishermen had maintained "a steady and prosperous fishery," Jacob Dykstra, president of the Point Judith Fishermen's Cooperative Association, said in 1966. In Chatham, Massachusetts, on Cape Cod, only the traps experienced particularly hard times; most of the traps on the Cape went out of business before the mid-1960s, and the fishermen moved to other fisheries. Chatham fishermen whose careers span those years do not speak of difficult times after World War II although they do mention the hardship of the Depression. Phil Schwind, who had fished on Cape Cod for many years, believed the style of work in fishing had changed, not incomes, which, he said, had never been extremely good.[60]

Another sign that inshore fishermen were not badly off is that they did not act politically to make the point that they were suffering and needed government aid. Lack of political action does not have to mean that no problem exists, but sectors of the offshore industry testified in hearings nearly every year about fishermen's problems. The sardine packers appealed for aid as the industry had difficulties, but the fishermen did not. Inshore fishermen could have joined either group without much additional effort. Organizations already existed among inshore fishermen which could act on their behalf. Lobstermen's associations worked on lobster regulations in Maine and Massachusetts, and leaders of cooperatives spoke for their membership in several places. In 1961 organizations of whiting processors and fishermen asked the Bureau of

Commercial Fisheries for funds to aid in improving quality and processing of whiting, but bigger boats from Gloucester dominated the inshore fishermen in this group.[61]

The inshore industry was clearly not the source of the decline of the New England fishing industry after World War II. Changes in the inshore industry could not account for the considerable decline in landings, revenues, wages, profits, fishermen, and boats in the postwar period. The inshore sector certainly did not disappoint the hopes of the immediate postwar years.

Character of the Offshore Fisheries[62]

The trends in much of the offshore industry, the other major segment of the fishing industry, contrasted sharply with those in the inshore fishery. They quickly disappointed the postwar hopes.

The number of boats involved in offshore fishing increased between 1945 and 1950 and then declined somewhat from 1950 to 1965. Every source of information provides different figures, but from 250 to 300 vessels fished offshore between 1950 and 1965. The number of fishermen probably declined from close to 4000 in 1950 to about 2500 in 1965.[63] At the same time, nearly everyone connected with the fishing industry who expressed an opinion felt that parts of the industry had very serious problems. Beginning soon after the war, fishermen, vessel owners, and some processors campaigned for government relief for their difficulties.[64] A picture of the general character of the offshore industry, valid in most

ways for the period from World War II to the present, and the manner in which parts of it changed between 1950 and 1965 helps to explain why those in the industry were concerned.

In 1950 boats in the offshore industry ranged in size from the 60 gross tons fishermen said made offshore work possible to about 370 gross tons, but most displaced less than 150 gross tons. These boats ranged in length from about 75 to 140 feet. In 1965 the largest offshore boat displaced 685 gross tons, but it was unique. More than 75 percent of the offshore boats were under 150 tons. One boat was nearly 170 feet long, but about 70 percent were less than 90 feet.[65]

An offshore boat looks large next to an inshore boat, but if one has not seen many inshore boats, most offshore boats seem small even at the pier. They seem smaller at sea. One observer travelling across the Atlantic on a freighter in high seas saw a fishing vessel tossing on huge waves. It looked like a cork, he said. He could not believe that ten men lived for a week or more inside it. Offshore boats also looked small next to the fishing boats of other countries by the mid-1960s. Russian vessels ranged in length from 95 feet to well over 600 feet.[66]

The large offshore vessels can travel to fishing grounds far off the coast. The largest ones do nearly all their work on the offshore banks. The smaller offshore boats fish inshore grounds as well as the offshore areas. New England boats fish mainly on Georges Bank and in the Gulf of Maine. Some boats travel farther to fishing banks near Canada, Browns Bank, for example, or Middle Bank.

Georges Bank, the most important fishing ground for New England, is a vast area of relatively shallow water, 12,00 square miles of it less than 100 fathoms deep. It extends east and south of Cape Cod for about 200 miles. The Gulf of Maine bounds Georges Bank on the north with deeper water and many smaller banks. Temperatures, light conditions in the shallow water, currents, and turbulence favor the survival of fish larvae and the growth of marine life on which fish depend for food. Water turbulence caused by frequent storms stirs mineral salts from the bottom with water at the surface. Plankton, vital food for fish and other sea life on which fish feed, live near the surface, at most 150 feet below, and their abundance depends on the amount of mineral salts in the water. Circular currents that prevail on Georges keep the eggs and larvae of fish from being carried into deeper waters where they would die from lack of food and inappropriate water termperatures. Parts of Georges Bank and the Gulf of Maine support more marine life than others. Groundfish, for example, the bottom-feeding fish which make up the principal species of the fisheries, usually live on hard-bottomed shoals, less often on mud-bottomed depressions between the shoals.[67]

As in the inshore fisheries, the size of the boat and the kind of trips it makes have implications for the kinds of markets the boat supplies with fish. Trips as far as parts of Georges Bank take about twelve hours from most ports in New England. "We leave at five or six at night and start working the next morning," one captain explained. To pay the costs of such a long trip for a large boat and to fill the larger capacity of a big

boat, the offshore vessels stay out a week, ten days, and occasionally longer. As a result, offshore boats land fish which can be more than a week old when it reaches the dock. These offshore landings supply fresh fish to many areas in New England and outside, lower quality fresh fish than the inshore fisheries, in the view of connoisseurs; but, in addition, dealers freeze a large share of the catch to sell later or to supply more distant markets.[68]

As in inshore work, successful offshore fishing depends to a large extent on the captain's knowledge of fishing grounds and fish behavior. But since offshore vessels can handle rougher seas, their captains have choices about where to fish; and, therefore, the movements of the fish do not entirely determine the composition of the catch. The captain of a boat decides where the vessel will fish based on his knowledge of fish behavior and where he has caught fish before, his hunches about the market prices different species will bring, and his assessment of information about where other captains have caught fish, only partially accurate since captains rarely give away the locations of the best grounds. These types of judgments make the skipper's job highly skilled and extremely pressured. Many captains rarely leave the wheelhouse during a trip. They work fourteen hours at a time watching a fishfinder, checking location, and making decisions about when to "set out" the gear and about how to adjust the gear. Adjustments determine the way the gear drags on the bottom and how successfully it catches fish. Skippers differ tremendously in their ability to find fish and bring in profitable trips. The best captains

generally are hired to work on the most efficient boats, or their success enables them and their families to purchase new, more productive boats.

Studies which have tried to explain the differences in incomes of boats by the characteristics of the vessel and the number of days at sea generally conclude that the ability of the captain, which they cannot measure, makes enormous differences in vessel revenues.[69]

During the years since World War II new technology has improved captains' ability to fish and navigate and has narrowed the range of captains' talents. Loran A and now Loran C allow skippers to specify the position of the vessel and return to the same spot later. Radios provide for communication with other vessels and increase safety because captains or crew can contact other boats and the Coast Guard quickly in an emergency. Radar makes collisions with other boats in bad weather less likely. Electronic fishfinders show schools of fish in the area of the boat and indicate their depth. The captain still cannot necessarily tell what kind of fish the instruments show except that they are either groundfish on the bottom or herring, mackerel, or another small pelagic, surface, or midwater fish. The Food and Agricultural Organization of the United Nations called electronic fishfinders the "outstanding development" in technology after World War II because it took some guesswork out of fishing and made midwater trawling, the use of gear that can raise nets to different levels from the bottom in response to the location of fish, potentially profitable.[70]

The expense of changing gear and the need to bring in large loads of fish constrain the usefulness of the skipper's instruments and his skill in finding fish and choosing the species to catch in major ways, however. The captain of an offshore vessel cannot pursue the range of fish that an inshore fisherman can. The conversion of a one-year-old, $480,000, 200 gross ton boat, the "Pat-San-Marie," from scalloping to seining cost $80,000 in 1968, for example. Vessels outfitted with side or stern trawls harvest bottom-feeding fish, mainly haddock, cod, flounder, whiting, and redfish. Purse seiners fish for adult herring offshore and for menhaden, used for industrial purposes. Vessels equipped with dredges go scalloping. Boats occasionally use more than one type of gear. In 1959 nine boats, or about 3 percent of the offshore fleet, had purse seines as well as otter trawl equipment. Six, all smaller offshore boats, converted to scalloping in the summer and to dragging in the winter. By the late 1960s, however, conversion of a dragger from trawling to scalloping cost about $15,000 unless the fisherman did much of the work himself, and few captains made the change. All these boats were exceptions to the rule. Almost always boats associate with one fishery, and the conversion of a vessel to another fishery makes news. In the 1970s vessel owners who recognized the disadvantages of such inflexibility had new boats designed to change fisheries with less expense, but the vessels still do not approach inshore boats' ease in converting.[71]

In addition, a captain of an offshore boat cannot pursue the variety of fish that an inshore fisherman can because he must bring in large loads

of high value fish that do not spoil quickly. An offshore captain cannot take advantage of small schools of less common fish which bring good prices in the small quantities in which they are available unless fishing for major species brings these in as bycatch. Such fish do not bring enough money to cover the expenses of the trip of a large boat.

More fishermen work on a larger offshore vessel than on an inshore boat. In 1959 the smallest offshore otter trawlers displacing about sixty gross tons, employed as few as five fishermen, but seventeen crewmen worked on the large Boston trawlers. An average of ten or eleven crew worked on all the offshore trawlers. Every purse seiner employed sixteen fishermen. Eleven men worked on each scalloper. In 1965 crews on otter trawlers ranged from three to seventeen men, but fewer worked on many boats. An average of eight fishermen worked on each otter trawler. Slightly smaller boats in the offshore fleet could have explained some of this change; the average gross tonnage of offshore boats fell from about 136 to 125 between 1959 and 1965.[72] Changes in boat design and gear technology and in union rules probably explained more, however,

Offshore fishermen usually work out of one port and associate with one major kind of fishing, with scalloping, for example, or groundfishing. Fishermen do not have obligations to a boat beyond one trip at a time. They can take a trip off or move among different boats within a fishery. A fisherman who wants a new "site" on a boat may ask in bars frequented by fishermen about openings on boats or go from boat to boat at the dock to find out about last-minute openings when a crewman does not show up.

Most important, in many cases, a friend or relative recommends a crewman for a site or persuades a captain to hire him. In the 1950s a fisherman who wanted a site also had to belong to the union. A fisherman may seek eventually to get a site on a "highliner". Highliners, the boats that earn the most income in a year, have less turnover than others.[73]

Fishermen already associated with a boat have say over the acceptance of new crew members. They care about the new crew members for a number of reasons. First, their income is a share of the revenue from the trip so a crew member who works slowly or who causes accidents with clumsy handling of the gear reduces the income for all. Usually an inexperienced crewman, a "greenhorn" or a "shacker," has to work for several months without pay, with a half share, or with a share of the "shack," income from sale of high-value bycatch, perhaps a few halibut or lobsters, outside the auction, unrecorded in official tallies of the catch and revenue. Second, crewmen care about who the other crew members are because they spend many days together without privacy and under tremendous physical strain. The compatibility of the crew influences the success of the trip; interpersonal problems make the hard work even more difficult.[74]

On the fishing grounds the crew handles the gear and takes care of the fish; skills acquired in these tasks are one reason that fisherman tend to stay on one type of boat.[75] The crew of an otter trawler sends the net overboard on the captain's orders, manages the "haul back" of

the net, dumps the fish from the "cod end" of the net into pens on deck, repairs the net and gear to send it overboard for the next tow, and sorts and guts the fish and stores it in ice in holds below deck while the next tow continues. Managing the gear properly is particularly important because it if tears, frays, or drags incorrectly on the bottom, it brings in few fish. A "rimwrack," a tear in the net from a "hangup" on the bottom, can require hours of fishing time for repair. Knowing how to "work twine," how to reknit the damaged net, at high speed is one of the most important skills. All the work demands strength and speed because the gear is unwieldy, time spent with nets on the deck costs fishing time and, therefore, income, and the crew must clear fish off the deck by the end of the next tow. A job on an otter trawler took longer to learn before the advent of stern trawling, where the gear is set out and hauled back over the stern instead of over the side, as in side trawling, the older method. Stern trawling, introduced in the mid-1960s, has made handling of the gear easier and safer.[76]

Working conditions on an otter trawler are difficult as well. The crew do all their work, except the stowing of fish in holds, on the open deck regardless of weather. Crews get little rest during a trip. Groundfish crews work shifts that continue around the clock unless the captain decides to "steam" to other grounds, but repairs on the gear or problems with clearing the deck of fish may mean the crew works more than the twelve hours per day of assigned shifts. Crews on trawlers fishing for ocean perch, redfish, usually work during the day

since the fish come off the bottom at night and make night fishing less productive. The crew's work became considerably less grueling during the 1970s as boats brought in less fish. They did not have to work as fast or as long to keep up with the tows.[77]

Fishermen on scallopers have the same major responsibilities, but they work with dredges instead of trawls, and they shuck scallops instead of gutting fish. The crew sets out the gear. After the dredges--two eleven, thirteen, or sixteen foot wide iron structures--have scraped along the bottom for a while, the crew bring them to the surface to dump the catch on board. The crew shovel rocks, small scallops, empty shells, and other debris or fish overboard. They hose off the rest of the catch and cut each scallop open to remove the "meat," the adductor muscle. They discard overboard the rest of the scallop, and they store the meats in bags and pack them with ice. The work is strenuous. As one observer noted, by the time the shucking is completed, "the heavy dredges are being hauled in once more and the entire backstraining process must start all over. Endurance and muscle are the key tools of a top scallop man." The work continues in shifts twenty-four hours a day.[78]

At any time, work with the gear is hazardous because clumsiness with the enormous equipment causes injuries. In the frequently stormy weather of Georges Bank, however, the work becomes very dangerous. Lurches of the boat or slipping gear knock fishermen overboard, take off their arms or fingers, or cause other injuries. "Icing," thick build-up

of ice on the deck, rigging, and gear, in winter storms or in high seas in very cold weather makes a boat so topheavy that waves can capsize it. Stormy seas can damage a boat even without icing. One captain described his strategy for dealing with such a situation: "In winter, in a storm, if we get hit with a head wind we just stay out there and wait. If you fight to come in, it doesn't pay. It'll get you all banged up." Long trips make storms impossible to avoid, but some captains choose to risk them because fewer boats work the grounds so fishing areas are uncrowded and fish are less likely to be dispersed and are easier to catch and because the price of fish rises with lower landings. Studies of the riskiness of a fishing job show the results of all these factors; they rated fishing second only to coal mining in likelihood of personal injury in the early 1960s.[79]

The captain's and crew's income comes from the sale of the fish in port. Auctions in New Bedford and in Boston determine the price of all species landed five days a week. An auction operated in Gloucester for some years after World War II, but now dealers make purchase arrangements with individual boats. All vessels operate under a "lay" system which determines the division of the "gross stock," the total revenue from the trip. Lay arrangements take many forms, but generally they prescribe which trip costs come out of the gross stock, how the crew and the "boat," or vessel owner, divide the remaining net stock, and which costs each group pays from their share of the net stock. Costs include wharfage fees; charges for scales used in the "weigh out"

of the catch; bonuses for the engineers, mate, and cook; fees for the "lumpers" who unload the fish; maintenance of radar and sounding equipment; ice; groceries; water; fuel; and the captain's share. One of the most common lay arrangements allocates 60 percent of the net stock to the crew and 40 percent to the boat with 10 percent of the boat's share going to the captain in addition to his share as a member of the crew.[80]

Fishermen, dealers, and vessel owners continually dispute over the provisions of the lay and the operation of the auction. Fishermen in Boston, Gloucester, and New Bedford unionized in the late 1930s to form the Atlantic Fishermen's Union affiliated with the National Maritime Union and later with Seafarer's International of the AFL. In 1958 New Bedford Fishermen broke with the Atlantic Fishermen's Union and formed the New Bedford Fishermen's Union. In all three ports the unions negotiated with the vessel owners over which costs should be subtracted from gross stock and which from each share of the net stock. The costs included radar and a fishermen's pension fund in the Gloucester strike in 1966; costs of electronic equipment in the 1966 contract approved in Boston; fuel, welfare fund payments, and rags and grease in the New Bedford strike in 1967. In many cases the disputes centered around costs recently added, expenses for electronic equipment and for the pension and welfare funds.[81]

In Boston the vessel owners also handled fish as wholesalers or processors, the groups who purchased the fish from the boats at the daily auction. Vessel owners could increase their earnings by keeping the

price of fish low. If the payments for landings of fish fell by a dollar, a vessel owner lost less than forty cents, his share of the gross stock, but he gained a whole dollar by paying less for the fish he purchased for processing or packing. Recognizing the vessel owners' incentives, the Boston union sought assurances of higher prices for fish. After the 1954 strike, the vessel owner-dealers guaranteed prices of at least five and one half cents per pound for 90 percent of "number-1 quality" scrod haddock and a twelve dollar a day wage for a "broker," a trip that ended without enough gross stock to cover expenses. The union and vessel owner-dealers argued most about the "sellover," the provision which allowed a dealer to refuse part of a load of fish on which he had bid claiming it was lower quality than he had expected and to call for a resale. Prices in the second sale invariably fell. Fishermen claimed that sellovers had little to do with quality, that dealers used sellovers to lower price. Indeed, in periods of strong demand for fish, sellovers did not occur.[82]

In New Bedford and Gloucester, dealers rarely owned boats, and in those ports the fishermen's unions, occasionally with vessel owner support, disputed with the dealers over weighing methods which they believed cheated them out of the full value of the catch. In 1967 the New Bedford union's complaints that dealers did not pay the prices they agreed to at the auction prompted an inquiry by the state attorney general's office. The investigation did not resolve the disputes. Accusations of cheating at boat unloadings led to a police investigation in 1969.

In 1971 fishermen tied up their boats to protest the dealers' marketing practices.[83]

The unions sought to control jobs. In the years following World War II they appeared to do so successfully. Contracts in New Bedford, Boston, and Gloucester required that vessel owners hire union men before non-union and that experienced fishermen, in effect, union men, get the first jobs. Union officers checked that boats sailed with full union crews, although they never installed systematic hiring procedures. In Boston the union negotiated over the number of fishermen employed on vessels. They bargained for changes in the watch from three eight-hour shifts per day to four six-hour watches which decreased the hours worked per day for each fisherman from sixteen to twelve and added another crew member to each watch, that is, two more crew hired for each trip. In Boston in the 1950s the union supervised rotation of crews to spread jobs. Fishermen worked five out of six trips. By 1964, however, the union had given up crew rotation.[84]

From the 1940s the union attempted to control production of fish. The union insisted that fishermen's incomes fell when price went down with the landings of large catches. During the 1940s the union prescribed explicit catch limits to captains. In 1947, however, the Massachusetts Superior Court ruled that the union's direct control of marketing through limits on the supply of fresh fish constituted an illegal monopoly. The Massachusetts Supreme Court upheld the decision in 1950, and the United States Supreme Court refused to hear the case.[85]

The union found other, indirect ways to limit production. They bargained over the number of days a trip could last and the number of days a boat had to "lay over" between trips. In New Bedford, in 1967, for example, the new contract specified that large draggers had to stay ashore three days after a trip, and small draggers two days. Scallopers could fish seven days and rest four days or fish eight days and rest five.[86]

All these provisions affected job quality, too. Fishermen preferred shorter trips and more days ashore if income were not substantially affected. The union influenced job quality in other ways as well. The union initiated pension and health and welfare plans for fishermen and negotiated for the vessel owners to pay part of the costs. In the opinion of James Ackert, president of the Atlantic Fishermen's Union in the 1960s, introduction of these fringe benefits was the major accomplishment of the union in the 1960s and the benefits remain the major advantage of union membership.[87]

In the 1960s the union leadership, particularly James Ackert, tried to convince the membership to take less conventional positions. Vessel owners' incomes were so low, Ackert felt, that they would not stay in business unless they could earn a larger share of the lay. Perhaps after good trips boat owners could take a larger share so that they had an incentive to make their boats more productive. Without the boat owners, he argued, fishermen would not have jobs, but he did not succeed in getting the union members' support.[88]

In most respects, one can generalize about the character of the offshore industry from World War II to the present, but the unions performed quite differently in the 1970s than in the first decades after World War II. The unions, particularly the Atlantic Fishermen's Union in Boston and Gloucester, weakened considerably in the late 1960s. By the early 1970s, the Boston union disintegrated at least in part because so few fishermen were left in the port. Membership declined substantially in Gloucester, and, in Ackert's opinion, the union was ineffectual by the mid-1970s. In New Bedford the union remained stronger but fought to keep its hold. The union controlled relations between vessel owners and crew through administration of the auction so the union sought to prevent boats from selling outside the auction. In late 1971 large numbers of boats sold "around the auction" despite the union's efforts to persuade them to go "up on the board." The state attorney general's office ruled that the city could not enforce its mandatory fish auction code. In 1977 New Bedford union officials opposed allowing fishermen to sell fish to foreigners at sea even though most fishermen favored the move. By the mid-1970s new boats entering the New Bedford fleet avoided association with the union. Union rules requiring more than five men per boat reduced incomes when fishery management regulations stipulated catch limits of 5000 pounds of yellowtail flounder per man per trip up to 25,000 pounds. As the price of fish and revenues rose, union restrictions on duration of trips and layovers reduced incomes, too. A union leader in New Bedford assessed the change:

the unions were strongest when the prices of fish were low. "There was a lot of fish and we had to stay together," but as prices rose in the 1970s, "Everything went to hell. . . . Just like everyone else," the individual fishermen "got carried away with making money."[89]

As discussion of union disputes suggests, most fishermen cannot own boats, unlike fishermen in the inshore fisheries. Because of their size and their sophisticated electronic equipment, offshore boats require substantial capital investments. By 1965 an 80 foot vessel with more advanced electronic gear and a modern stern trawling design cost about $200,000. That was almost double the cost of a boat of about the same size shortly after World War II. In Boston and Rockland and to a lesser extent in Gloucester and New Bedford, non-fisherman corporations have owned a large share of the offshore vessels and have hired the captain and the crew. Some of these firms just manage vessels. Others, like the vessel owner-dealers in Boston, integrated vertically into packing fish for sale to processors or performing fairly simple processing--filleting, skinning, and packing fish for wholesalers. Still others, such as Gorton-Pew Fisheries, later Gorton's of Gloucester, operate such substantial processing facilities that vessel ownership had a minor part in the business. During World War II with demand for fish particularly strong, processors had to rely on their own vessels for a supply of fish but in the ten to fifteen years after the war, most large processing firms divested themselves of their boats. They depend instead on foreign imports of frozen fish.[90]

These generalizations about vessel ownership apply best to Boston and Rockland. In Gloucester and New Bedford many vessel owners also fish. Most commonly, privately-held, family-controlled corporations own one or more boats, and family members work as captain and fill some of the crew sites. In Gloucester, for instance, the Novellos, the Brancaleones, the Parisis, the Roses, and others own and captain their offshore boats. In Gloucester, to some extent, but especially in New Bedford these fishing families have established strong ties with banks which make vessel financing easier to obtain. In other cases, vessel owners arrange for captains to buy a boat by purchasing the stock of the vessel-owning corporation over a long period of time.[91]

As in inshore fishing, work in offshore fishing creates a way of life, although quite different from that of the inshore fisherman. The long trips make conventional family arrangements and associations with a community impossible. Some fishermen leave offshore work in order to see more of their families, and inshore fishermen point to the long absences as the major reason they would not work on offshore boats even if the pay were higher. After World War II, immigrants filled most of the jobs in the offshore fisheries. They came from traditions of fishing in their native countries. In Gloucester, Portuguese and then Sicilians have made up the largest proportion of the fleet. In Boston Canadians from the Maritimes have dominated. In 1964, 64 percent of fishermen on Boston large trawlers had been born in Canada, 5 percent in Europe. In New Bedford, Norwegians and later Portuguese

have been the largest groups. From 1952 through 1962 two-thirds of the new union members in New Bedford had emigrated from Europe, mainly from Norway. In Gloucester and New Bedford, the ethnic fishing communities appear to offer support for the fishermen and their families which values work in fishing and the life style that accompanies it. A change out of offshore fishing can disrupt these established realtionships and life styles.[92]

Trends in the Offshore Fisheries: 1945-1965

The quantities of fish landed by large offshore vessels require extensive port facilities with pier space, unloading equipment, and trucking and processing capacity. Boston, New Bedford, and Gloucester, Massachusetts; and Portland and Rockland, Maine had facilities that filled these needs. Nearly all offshore boats landed all their fish in those ports. Each port served a contingent of inshore boats as well, often as many or more inshore boats as offshore; but the catch from offshore boats dominated the landings.

Fishermen and processors in the major ports have specialized in handling different kinds of fish. When an otter trawler fished for redfish, it landed in a redfish port; when it fished for haddock, it often went to Boston, occasionally to New York, to land the catch. Because the ports specialized, they had quite different experiences between 1945 and 1965.

Only New Bedford fulfilled the postwar predictions of a prosperous industry. The hardships and decline of the postwar period concentrated

in the offshore industry, as the trends described below point out.

1. New Bedford

New Bedford flourished. The value of the catch reached new highs nearly every year in the early 1950s as New Bedford climbed in rank among United States fishing ports measured in value of landings from fourth in 1950 to third in 1957 to second by 1959. In 1955 the revenue from the New Bedford catch surpassed that of Boston, which had been the major New England port. In 1964 for the first time the value of New Bedford landings was greater than that of Boston and Gloucester combined. The weight of landings fluctuated, but value rose through the 1950s and early 1960s. By 1965 fishermen brought in 147 million pounds of fish and shellfish worth almost $20 million (see Table 1).[93]

Not all species figured equally in New Bedford's growth. Sea scallops held the most important role. Landings increased from the 1940s to the early 1960s (see Table 1). After 1961 production declined, and by 1965 landings had fallen to 11.3 million pounds. Scallops provided the largest proportion of income to boat owners and fishermen in New Bedford during the twenty years after the war. By 1950 scallop revenue made up 49 percent of the value of all landings, in 1961 53 percent, and in 1965 38 percent.[94]

Investment in scallopers and estimates of the crew's share of scallop revenues suggested that the trends in scallop landings meant that at least until 1960, vessel owners and crewmen prospered although their incomes were not extremely high. The number of scallopers in

Table 1.

New Bedford Landings, 1945-1965

Year	Total		Sea Scallops		Yellowtail Flounder	
	pounds (millions)	value (millions)	pounds (millions)	value (millions)	pounds (millions)	value (millions)
1945	101.4	$ 8.6	3.9	$ 1.3	15.8	$ .9
1946	90.3	12.2	8.9	5.0	17.1	1.3
1947	73.1	10.4	10.7	5.3	20.8	1.8
1948	77.6	11.8	10.1	5.3	25.2	2.4
1949	105.7	9.7	11.7	4.3	19.6	1.9
1950	116.9	11.3	12.0	5.6	14.1	1.6
1951	79.3	11.9	12.6	5.6	12.6	1.7
1952	75.2	13.1	12.1	7.2	11.8	1.4
1953	75.0	11.8	16.2	7.2	9.9	1.0
1954	71.6	10.3	13.8	6.2	8.1	.8
1955	83.0	11.9	14.0	7.3	9.7	1.0
1956	88.0	12.3	14.2	7.7	8.6	.9
1957	104.3	13.0	16.5	8.0	14.6	1.3
1958	111.7	13.8	15.2	7.4	24.9	2.2
1959	108.0	15.7	18.8	9.1	21.2	2.4
1960	85.1	13.2	19.4	6.7	23.7	2.3
1961	100.4	14.8	20.6	7.8	30.2	2.6
1962	119.8	16.5	19.3	7.9	46.5	3.4
1963	135.1	16.8	15.9	7.4	63.8	4.2
1964	135.7	16.7	12.9	7.0	65.8	4.5
1965	147.3	19.8	11.3	7.7	66.0	6.3

Source: Fishery Statistics of the United States, 1945-1965.

New Bedford declined between 1956 and 1962 from fifty-six to forty-seven boats fishing all year and from seventy-nine to sixty boats working at the peak of the fishing season. However, vessel owners added twelve new larger boats with more horsepower and more up-to-date equipment than that used by the boats that made up the fleet in 1956. The decline in the number of vessels accompanied by the new additions replaced and modernized the fleet instead of decreasing capital investment. Estimates of the crew share of revenues on scallop vessels from 1956 through 1962 suggested that wages probably were higher than those in jobs in manufacturing in New Bedford, although a scalloper crew share paid for more hours of work than the earnings in a manufacturing job. A crewman's share, the amount paid to a site in a year, averaged $5600 to $6200 in 1956 compared with $4100 in manufacturing, $7000 to $7600 in 1959 compared to $4600 in manufacturing, and $10,000 to $11,000 in 1967 in contrast to $6000 in manufacturing.[95] No studies of the incomes of crewmen exist, however. Most crewmen earn less than a crew share on any vessel because they rarely make as many trips as the boat. A crew share often goes to more than one crewman during the year.

Yellowtail flounder added substantially to New Bedford's prosperity as well, especially after 1958 (see Table 1). By 1965 yellowtail competed with scallops for the position of most important specie in the port. Boats that had fished for haddock and cod redirected their fishing towards yellowtail. Smaller boats as well as large offshore vessels benefited from yellowtail. In 1965 in New Bedford inshore fishermen landed fourteen

million pounds of yellowtail flounder, 22 percent of the total New Bedford yellowtail landings.[96]

Sketchy information on fishermen working in New Bedford provides little suggestion of problems in the fisheries. Employment declined somewhat between 1952 and 1954, then increased through 1962. About 940 fishermen worked in New Bedford in 1952, about 1050 in 1962. Large numbers of workers moved in and out of the industry, and many fishermen probably worked part time. According to one study, only 775 fishermen worked at least 175 days during two of the three years from 1961 through 1963. The union and the Seafood Producers Association, the organization of boat owners, complained that few young people entered fishing in New Bedford. In 1963 21 percent of fishermen who had worked more than 175 days in two of the three years before were less than thirty-five years old compared with about 40 percent of the U.S. male labor force,[97] but this trend probably indicated some young people's distaste for the jobs and others' difficulties in getting sites on boats to accumulate 175 days of fishing in a year rather than poor wages or deterioration in the fleet. On balance, however, the evidence shows that fishermen, vessel owners, and processors prospered.

2. Boston

The trends in New Bedford contrasted with those in other offshore ports in New England. In other ports depression in the fishing industry smashed the hopes of those who had talked of postwar growth. Boston experienced the most extreme decline. Landings declined through the

1950s and 1960s after a postwar high in 1947 (see Table 2). The value of landings at Boston Fish Pier fell, too, from a high in 1948 of over $16 million to $11.6 million in 1965.[98]

Boston's landings reflected dependence on one species even more than New Bedford's. Boston offshore boats depended mainly on haddock and to a lesser extent on cod, the traditional staples of the New England fisheries, supplemented with some landings of flounder and redfish (see Table 2). In 1947 haddock made up 60 percent of the weight of the catch from offshore vessels and cod landings contributed 20 percent. While cod decreased slightly in importance in the total catch, haddock became even more important. By 1950 haddock made up more than 70 percent of the catch, cod 14 percent. By 1965 haddock was nearly 75 percent of the total landings and cod just under 13 percent. Haddock figured as predominantly in the value of the catch. Haddock brought 60 percent of the revenue to offshore boats in 1947, 72 percent in 1950, and 77 percent in 1965. Cod added 16 percent in 1947, 13 percent in 1950, and 11 percent in 1965.[99]

Activity at the Boston Fish Pier changed dramatically between 1950 and 1965. In the years just after World War II, large numbers of boats tied up at the pier for the daily auctions. By 1965 only a handful appeared to sell their catch. The number of offshore boats had declined substantially. In 1947 sixty "large" trawlers (over 150 gross tons) fished out of Boston along with twenty-eight "medium" draggers (between 50 and 150 gross tons) and two large line trawlers left from days of dory

Table 2.

Boston Landings, 1945-1965

Year	Total		Haddock		Cod	
	pounds (millions)	value (millions)	pounds (millions)	value (millions)	pounds (millions)	value (millions)
1945	188.2	$ 10.7	66.4	$ 5.2	72.9	$ 5.2
1946	158.6	13.7	71.5	7.4	35.7	2.8
1947	202.7	15.0	107.5	8.5	34.4	2.3
1948	200.0	16.2	105.3	9.8	34.7	2.7
1949	172.5	12.2	90.1	7.2	28.6	2.0
1950	172.0	13.6	107.4	9.2	24.4	1.8
1951	171.0	14.3	106.9	9.5	20.8	1.7
1952	173.2	14.3	109.1	9.7	21.6	1.8
1953	152.3	12.1	98.4	8.6	16.6	1.3
1954	151.4	10.8	108.4	8.0	16.5	1.2
1955	136.7	9.2	96.3	6.7	15.3	1.0
1956	147.4	10.5	106.7	7.8	17.5	1.2
1957	135.1	11.2	96.3	8.3	17.5	1.2
1958	123.8	12.6	81.5	9.4	16.2	1.4
1959	113.2	11.2	72.4	8.2	17.7	1.4
1960	110.4	9.6	76.7	7.0	15.5	1.1
1961	117.0	9.6	84.1	7.2	18.8	1.4
1962	117.6	10.5	83.0	7.8	21.2	1.7
1963	107.2	10.8	75.2	8.3	18.0	1.5
1964	107.5	10.3	76.1	7.9	14.9	1.2
1965	103.6	11.6	75.6	8.9	12.9	1.2

Source: Fishery Statistics of the United States, 1945-1965.

fishing. In 1965, twenty-six large trawlers and twenty-five medium trawlers remained.[100]

The records of earnings of Boston offshore boats suggested reasons for this decline. Boston trawlers over 200 gross tons varied greatly in their earnings, according to a study of a sample of boats. Some consistently made profits while others suffered large losses between 1953 and 1957. Boston large trawlers that displaced between 150 and 199 gross tons suffered losses more generally while their receipts fell. All vessels in the study lost money in 1956. Only one out of six in 1957 reported a profit.[101]

Fewer fishermen worked on large Boston offshore boats. In 1950 close to 1100 men fished on these Boston vessels; in 1964 about 730 fishermen held jobs on the large trawlers. Most of these fishermen did not earn a good living. In 1964 fishermen earned about 14 percent more than they had in 1948, while the average earnings of production workers in manufacturing had increased 90 percent in the same period. Between 1951 and 1964 average annual incomes for Boston fishermen on the large offshore trawlers declined from $4720 to $4186. Incomes varied considerably, however, with the number of trips and with position in the crew. In 1964 most full-time fishermen, those who made more than twenty trips per year, earned over $6000, close to the national median for all full-time, nonseasonal male workers. This group made up about 42 percent of all fishermen. They worked nearly 270 twelve hour days to achieve this, well above the hours worked by most workers. On the other

hand, fishermen who did not work as much, who made thirteen to twenty trips during the year, earned less than $4000. Eighty percent of these fishermen had no other source of income. Twenty percent of the Boston offshore trawlermen fell into this group. The rest made fewer trips and had lower incomes. The twenty-five captains in the fleet did better than fishermen in any other positions. Captains who made more than twenty trips earned more than $13,000; those who worked between thirteen and twenty trips made about $8500.[102]

3. Gloucester

Gloucester's fortunes resembled Boston's. Landings declined erratically after 1951 although Gloucester remained a leading national port in volume (see Table 3). The value of landings went down as well.[103]

In the years immediately after World War II Gloucester was the redfish port of the region. Gloucester boats landed 73 percent of New England redfish in 1946. Gloucester boats depended heavily on redfish. In 1946 redfish landings made up 60 percent of the Gloucester catch in weight, about 54 percent of the revenue (see Table 3). Redfish landings declined considerably after the peak year of 1951, however. The offshore Gloucester boats bore almost all the impact of the decline.[104]

Unlike the pattern in Boston where haddock remained as important in the Boston catch even though haddock landings declined, redfish in Gloucester became less important. By 1955 redfish accounted for 32 percent of the landings and by 1965 only 18 percent.[105]

Table 3.

Gloucester Landings, 1945-1965

Year	Total		Redfish		Whiting		Cod & Haddock	
	pounds (mills.)	value (mills.)	pounds (mills.)	value (mills.)	pounds (mills.)	value (mills.)	pounds (mills.)	value (mills.)
1945	213.5	$ 11.2	102.0	$ 4.0	16.8	$ .7	47.6	$ 3.6
1946	218.0	10.8	130.9	5.8	8.8	.4	33.1	2.4
1947	163.7	7.6	95.4	4.2	9.1	.4	21.0	1.3
1948	251.1	11.2	176.8	7.4	13.7	.6	18.8	1.3
1949	250.9	10.4	169.3	7.3	19.4	.7	15.5	.9
1950	195.9	9.1	120.3	5.7	17.0	.6	16.0	1.2
1951	260.0	12.7	177.7	8.8	36.9	1.3	10.8	.8
1952	222.4	9.6	121.6	5.3	30.2	1.1	14.7	1.1
1953	186.0	7.0	88.3	3.4	30.3	.8	11.2	.8
1954	232.4	8.2	98.7	4.0	38.5	1.1	11.5	.8
1955	253.5	7.9	86.2	3.3	53.3	1.1	9.6	.6
1956	252.0	7.4	83.3	3.1	46.4	.9	10.1	.7
1957	248.9	7.0	65.4	2.5	76.5	1.4	10.9	.8
1958	230.2	8.0	75.0	3.1	58.9	1.5	13.0	1.2
1959	228.7	7.1	58.2	2.4	61.9	1.2	15.3	1.5
1960	192.4	6.3	61.7	2.3	63.2	1.4	15.3	1.2
1961	163.0	6.0	54.0	2.1	51.6	1.2	18.4	1.4
1962	167.2	6.4	53.6	2.3	53.2	1.2	19.9	1.8
1963	139.5	6.6	43.2	2.1	50.0	1.2	20.6	2.1
1964	124.2	6.1	29.1	1.2	44.3	1.0	26.7	2.5
1965	121.4	7.0	22.5	1.0	36.7	1.1	30.1	3.3

Source: Fishery Statistics of the United States, 1945-1965.

The Gloucester fleet turned to other species. The most important was whiting. Offshore boats, especially medium-sized trawlers, could travel to the fishing grounds off the Maine coast, fished by Maine inshore boats, while smaller inshore boats from Gloucester could not. Between 1956 and 1957 whiting landings in Gloucester jumped from 44 million pounds to 75 million pounds (see Table 3). One observer credited the increase with saving Gloucester from "disaster." In the late 1950s and early 1960s twenty-eight medium trawlers fished for whiting from Gloucester along with occasional large trawlers. In 1960 whiting landings were still high, accounting for 33 percent of the catch and 22 percent of the revenue in the port. Landings declined until 1965, although they remained 30 percent of total catch, 15 percent of the port's revenue.[106]

Haddock became more important to offshore boats as whiting and redfish declined. In 1960 haddock made up only 6.3 percent of the landings, 16 percent of all revenue, but by 1965 haddock landings had doubled and made up 20 percent of the catch, nearly 40 percent of the income in the port. The dependence of the offshore boats on haddock was even greater than the Gloucester landings figures indicate because the large boats often took their catch to Boston in search of a better price. In 1963, for example, Gloucester-based vessels accounted for 24 percent of the Boston landings.[107]

These changes brought hard times to the Gloucester offshore fleet. The number of offshore boats declined considerably.

In 1952 eighty-seven large and medium trawlers which fished primarily for groundfish, mostly redfish but also haddock and cod, landed in Gloucester. By 1955 sixty-seven boats landed fish there. By 1965 probably less than sixty boats worked out of Gloucester.[108] Many vessel owners operated at a loss. Of thirty-five Gloucester trawlers surveyed in the late 1950s eighteen made money and seventeen lost in 1953, but losses were far larger than profits so that the boats showed an aggregate loss. In 1954 and 1955 the situation was much the same. In 1954 twenty-two boats realized profits; fifteen lost money. In 1955 fourteen profited; twenty-three had losses. According to another investigation of Gloucester trawler earnings, boats generally did well before 1953, but after 1953 trawler operations rarely stayed out of the red.[109]

The number of fishermen working on Gloucester offshore boats undoubtedly declined, too, but no numbers exist to show how. The number of crew sites declined with the number of vessels from 797 in 1952 to 649 in 1955. As the number of sites declined, many fishermen were unemployed, and more were underemployed. They worked fewer trips per year. In addition, in Gloucester the average crew share for a site on a boat went down after 1951 from around $7000 per year to close to $4500. As a result, more crew members divided the smaller earnings of a share on a boat in 1955 than in 1952. The total number of crewmen, including many inshore fishermen, fell from 1643 in 1950 to 1400 in 1955 to about 740 in 1965.[110]

4. Rockland and Portland

In Rockland and Portland, Maine, the other two New England offshore ports, the trends resembled Gloucester's and Boston's, although the decline was not as severe. Their fleets depended heavily on redfish and continued to do so longer than Gloucester's. The Rockland and Portland industries were much smaller than Gloucester's and Boston's. Each port supported few boats, and the value of the landings never reached three million dollars in either port between World War II and 1965.[111]

End of Postwar Optimism

The postwar optimism about the prospects for the fishing industry faded quickly, well before the trends in the offshore groundfish industry in Boston, Gloucester, Portland, and Rockland had become obvious to most. In 1949 a group from New England and the West Coast which represented fishermen, processors, vessel owners, canners, and seafood workers requested a hearing before the House Committee on Merchant Marine and Fisheries to call attention to the problems of the industry. The New England group appeared to have forgotten that the future had ever looked hopeful. John Del Torchio, president of the Gloucester Fisheries Association, an organization of fish processors, called the situation in the Gloucester industry "acute." He told the congressmen, "The fishing industry in Gloucester has been aware of the critical condition facing it for some time." Processors had contributed $75,000 to try to "offset the

hardship being imposed." Melvin Bernstein, an attorney who represented a group of Gloucester vessel owners, calimed that even the best boats "are right on the ragged edge. Any drop in price and they are done. . . . Something has to be done in the future, sir, or the industry will not be there." The mayor of Gloucester said that without federal action, "Gloucester is destined to become a city of decreasing population, of deserted wharves and a city reduced from prosperity to poverty and bearing the resemblance of a ghost mining town in the West." The representative from Gloucester, William Bates, told his fellow congressmen that only the war had saved Gloucester from severe unemployment and business stagnation and that the city could return to the pre-war conditions. Patrick McHugh, secretary-treasurer of the Atlantic Fishermen's Union, warned of the danger to fishermen "of again living through a period of low earnings, unemployment, and a substandard American way of life." New Bedford voices joined those from Gloucester and Boston to warn of danger to the flounder industry, and one spokesman from Maine pointed to threats to lobstermen's livelihood. The president of a New Bedford company which serviced and repaired fishing vessels claimed that the "fishing industry is engaged in a fight for survival."[112]

In the next few years, New England fishing groups became more convinced that the industry had severe problems. As postwar trends became more apparent, however, New Bedford groups and lobstering interests no longer insisted they might be harmed. Groups from Boston and Gloucester called attention to the groundfish industry, those who

harvested and processed cod, haddock, redfish, and hake and occasionally pollock and cusk.[113] As they appealed for relief from Congress and from the Tariff Commission in 1953, 1954, and 1956, they no longer warned of what could happen; they pointed out what had already happened to the groundfish industry.[114]

By the mid-1950s Tariff Commission conclusions and congressional statements reflected in part a new consensus which had emerged between 1951 and 1956.[115] In 1949 New England fishing groups, convinced that the industry faced collapse, found little sympathy. By the mid-1950s, however, the conventional view in Congress and the press held that the New England fishing industry, without distinction among its segments, had severe problems. The fates of Gloucester and Boston epitomized the difficulties. Policy makers set out to do something to cure these ills.

CHAPTER 3

EFFORTS AT REVITALIZATION

New England fishermen, vessel owners, and processors in the groundfish industry offered a straightforward explanation for their problems by the late 1940s. Imports of ground fish from Canada, Newfoundland, Iceland, and Norway undersold the domestic product and deprived Americans of their markets. The fishermen's union, processors' organizations, vessel owners' associations, and the seafood workers' union provided an analysis of the problems: "United States production follows the consumption rate very closely. Increased imports together with decreased exports make available a greater supply than the demand. This condition can only result in the elimination of excess production, either import or domestic. Highly favorable factors for imports must spell the elimination of some domestic production, unless adjustments are put into effect." They presented data to show the growth of imports between the late 1930s and 1948. Imports of groundfish fillets had increased from less than ten million pounds in 1938 to well over fifty million pounds in 1948. In other words, imports of groundfish fillets had increased by 589 percent in these years, they said, while United States production of frozen fishery products increased only 62 percent. The House of Representatives summed up the industry's ideas in a resolution passed in April 1949: "operations of much of the fishing industry have

been seriously curtailed by reason of steadily growing imports of fish and fishery products . . . the domestic fishing industry has already been adversely affected and is further seriously threatened by the consistently increasing importations of fish and fishery products into the United States."[1]

Explanations for the Problems

The spokesmen from New England explained why imports could have these effects on their business. The imported fish were cheaper than New England fish for several reasons at every level of production: fishing, vessel ownership, and processing. Fishermen earned lower wages in the other north Atlantic countries. Patrick McHugh, secretary-treasurer of the Atlantic Fishermen's Union, stated, "I think our fundamental trouble in this industry is caused by the fact that we have to compete with cheap Canadian labor, Newfoundland, and Iceland labor, and cheapen the price of the fish to the fishermen." Not only did Canadian and Icelandic fishermen earn less, but they worked more. Canadian and Newfoundland fishermen worked longer hours on the fishing banks, "many times 18 or 20 or 24 hours a day," according to McHugh, while American fishermen's union contract specified twelve-hour days. Unlike their American counterparts, foreign fishermen had almost no layover time: "Just enough to discharge their trip when they are out again." In addition, Canadian fishermen did tasks not included in the American fishermen's jobs, according to Melvin Bernstein who represented the vessel owners of

Gloucester: "They paint the boats, they repair the boats." While no one had data to show the differences in earnings, most believed that a Canadian fisherman earned about half as much as an American fisherman.[2]

Canadian vessel owners could realize profits even if they received much lower ex-vessel prices than American owners, the New England representatives said. Like American fishermen, those in the other countries earned a share of the revenue from the catch, but the lay arrangements differed. According to Bernstein, Canadian vessel owners took 62 1/2 percent of the gross stock. In Gloucester owners earned about 40 percent of the net stock. In addition, foreign vessel owners paid less for equipment and services: "The cost of materials, the cost of netting, the cost of fishing gear, the cost of repairs, particularly, the hourly rate of labor . . . is altogether different that it is here." Part of the reason the costs were lower was that production workers earned lower wages. The other reason was that governments subsidized their fishing industries. "They have government subsidy for their boats, they get government support, government loans, noninterest-bearing loans," Bernstein said. "In Iceland . . . it is the government buying the boats and giving it to these men. . . . In this country our men have had to build their own boats, mortgage them, finance them. They have high interest rate charges." Thomas Fulham, the president of a Boston vessel-owning corporation, enumerated government subsidies to the fishing industries of Iceland and Canada. These included subsidies and no interest loans for vessel construction and loans for gear and engines. "The result of all

these benefits, gentlemen, is that our foreign competitors have low-cost producing units enabling them to produce raw material at a very low base price . . . their boats cost less because of subsidies; it naturally follows that their raw-material [fish] prices are far below ours."[3]

Iceland and Canada financed some of these subsidies, the New England representatives claimed, with United States funds. According to Congressman Thor Tollefson of Washington, "Our own Federal Government, in many instances, encouraged and assisted in the enlargement and building of a fishing fleet and techniques of other nations."[4]

Finally, a few New England spokesmen argued that Canadian vessel owners faced lower costs because they were closer to the more prolific fishing grounds. McHugh said, "They may have to steam 100 and possibly as far as 200 miles, whereas we have to steam anywhere from 400 to 700, 800 and 900 miles to reach the same grounds, which means that we must put in 2 to 3 days steaming each trip which means less time, of course, when we are producing and therefore they have an extra added advantage over us. In addition to that our grounds are not as productive as they formerly were. . . . A few years ago we got for a trip an average of 125,000 to 150,000 pounds a trip. Now, presently, for the last year or two, it has been around 70,000, 80,000 or 100,000 pounds, though occasionally there is a better trip."[5]

These cost differences had important implications for the operations of the Gloucester boats. Large modern boats in Gloucester, Bernstein said, had earnings of about 6.8 percent of gross stock, an average of about

a quarter cent per pound of redfish, when the redfish sold at the dock for 4 1/4 cents per pound. Other boats lost money at that price. If the dealers "cannot pay our boats, our top boats 4 1/4 cents for redfish, the margin of profit is gone. If all they can pay those boats to compete with Canadian fish is 3.75 cents, almost 4 cents a pound, even these best boats in Gloucester are going bankrupt," Bernstein claimed. For medium-sized draggers, in contrast, the "margin of safety" was smaller. Three out of seven were losing money; the other four had earnings of about 4 percent of the gross stock. If the redfish price fell from 4 1/2 cents to 4.1 cents per pound, they would have no profits; below 4.1 cents they would go bankrupt.[6]

On the other hand, however, dealers could not afford to pay such high ex-vessel prices when Canadian dealers paid only 1.5 cents per pound, the amount Bernstein quoted for redfish in Nova Scotia. Canadian dealers started with lower costs of production when they paid less for fish, but other considerations lowered these still further. Canadian sea-food workers earned far less than American ones. Edward Newton, sales manager of the Point Judith Fishermen's Cooperative Association, provided data on wages that showed fish cutters who filleted the fresh fish in the United States earned $1.30 per hour compared to $.55 per hour in Canada and $.30 per hour in Iceland. The differentials were similar for skinners, packers or wrappers, and floormen or handlers. Patrick McHugh reported that women in Newfoundland fish processing plants earned $.35 per hour and worked fifteen hours per day. The men made

$.60 per hour and worked as long as the employer required. "There isn't any question but those people are being exploited," McHugh said, and by continuing to import fish from those countries, "all we were doing and still doing is making a few fish companies in Newfoundland and Canada rich."[7]

Other costs were lower for Canadian processors as well. John DelTorchio, the president of the Gloucester Fisheries Association, reported that the governments of the other countries had subsidized the building of processing plants and freezers and even contributed to transporting fish. Thomas Fulham told of Icelandic and Canadian aid to fish canneries and freezers.[8]

The result of the differences in costs for American and foreign dealers, DelTorchio said, was that Gloucester dealers had to sell fillets for thirteen cents which had cost them twenty cents to process. "I think every industry in Gloucester would be very pleased to make as low as a quarter of a cent a pound on every pound of fish handled in Gloucester. . . . They [the Canadians and Icelanders] are just thinking in terms of huge profit . . . with the difference in their costs. If we go down to 20 cents, they can easily go down to 19 and still make a very fine profit." With exactly the same kind of fish, he said, "They are always just under us."[9]

Fulham explained how this could happen and summarized the influence of all these factors. In 1945 the ex-vessel price of cod had been 3 1/2 cents per pound in Canada, six cents in the United States, Fulham

explained. Filleting and skinning left 40 percent of the weight of the fish which meant that the price per pound of raw material rose to 8 3/4 cents per pound in Canada, fifteen cents in the United States. Processing labor costs amounted to four cents per pound in Canada, eight cents in the United States so that the total costs to the Canadian processor were 12 3/4 cents per pound in contrast to 23 cents per pound for the American processor.[10]

Most of the story the industry spokesmen presented was true. Canada and other north Atlantic countries did have considerable advantages in costs, and imports were rising as a share of total consumption in the United States. The spokesmen did exaggerate some features of the situation. For example, McHugh's description of longer trips and smaller catches were true only for the redfish vessels as the stocks in the Gulf of Maine became depleted and fishermen had to travel to the banks off Canada to find more plentiful resources. Foreign government subsidies to their fishing industries were still so small that they probably did not affect costs in significant ways. Most important, however, as the next chapter explains in more detail, fishing industry spokesmen missed the major root of the problems they faced. After World War II demand for groundfish had fallen and had become more elastic as meat became more available again; therefore, prices fell.[11]

Efforts to Solve the Problem: The Search for Tariff Relief

Given their explanations of the causes of their difficulties, representatives of the fishing industry saw the solution to their problems in making imports unavailable or much more expensive. They wanted a quota to restrict imports of groundfish to the level of a few years before or to prevent imports taking a larger share of the domestic market. Most of their effort between World War II and the early 1950s aimed at establishing quotas. Industry representatives also wanted higher tariffs on groundfish. The trade agreement effective in 1939 set the duty on groundfish fillets at 1 7/8 cents per pound on a quota of fifteen million pounds or 15 percent of average annual U.S. consumption in the three preceding years, whichever was greater. For imports over the quota the agreements set the duty at 2 1/2 cents per pound.[12]

Those tariff levels were insignificant to importers, representatives of the fishing industry claimed. When the duties were established, a large share of fish came into the country in the round. By the end of World War II almost all groundfish imports were fillets. Without the head, tail, and bones, the fillet made up only 40 percent of the weight of the round fish and had much higher value per pound. At the same time, the price of fillets at the Canadian border nearly tripled between 1939 and 1948. As a result, the tariff on fish above the quota fell from about 33 percent of the price of the fish entering the country from Canada to a little more than 12 percent. Representatives of the fishing industry

argued that at that level the tariffs no longer offered any protection considering the large differences between foreign and domestic production costs.[13]

Events of the decades before had raised their fears about the effects of too little tariff protection. Many remembered the loss of the Gloucester salt and smoked fish business to Canada due, in their opinion, to inadequate tariffs. In addition, in 1939 General Seafoods, the largest filleting firm in New England, arranged to establish a plant in Newfoundland and ship fillets to the United States duty free. Congress passed legislation to redefine what constituted an "American fishery" to make such ventures subject to tariffs. Only that action made expansion in Canada unprofitable before World War II.[14]

Fishing industry representatives pressured the federal government for quotas and for higher tariffs with almost no letup through the late 1940s and early 1950s. The Atlantic Fishermen's union spearheaded the efforts to restrict imports through the America's Wage Earners' Protective Conference, according to observers; and the dealers and vessel owner associations and the shoreworkers' union pooled resources with the fishermen's union.[15]

At first the industry's arguments drew little sympathy from the groups who could change the tariff situation. For example, in 1946 and 1948 industry representatives appealed to the Committee for Reciprocity Information of the Department of State to influence trade agreements. The General Agreement on Tariffs and Trade effective in 1948 did not

lower tariffs on groundfish, but the United States promised not to raise the tariff on fish imported above the quota for the duration of the agreement. In 1949 the House of Representatives responded to pressure from New England interests by asking for a report from the State Department on the effects of imports on the domestic fishing industry. The report concluded that the industry did not suffer from increasing imports. Fishing spokesmen joined representatives of other industries in 1951 in pushing for stronger "escape-clause" and "peril point" provisions in trade agreements legislation to allow for appeals for adjustment in tariffs and for restrictions on lowering tariffs if imports harmed domestic industries.[16]

Later in 1951 the Tariff Commission granted the industry a hearing under the escape-clause provisions of the Trade Agreements Extension Act to determine whether imports threatened the groundfish industry with serious injury. After an extensive study of the conditions facing fishermen, vessel owners, processors, and shore workers, the Commission voted three to two not to recommend tariff relief. The commissioners who opposed the industry's request argued that in general the industry showed profits, rising wages, and increasing production after the war. Not only had the industry not yet suffered from imports, but the evidence did not support the claim that imports would injure the domestic industry in the future, they argued. The two commissioners who supported the New England industry's request believed that the most recent trends showed considerable decline in the industry's

fortunes and placed the fishing and filleting industry in "an extremely precarious position." Imports threatened the "complete destruction" of the industry.[17]

The New England industry tried other routes to relief from imports. When these failed, they went back to the Tariff Commission for another hearing. In 1954 the Commission ruled in their favor and sent recommendations to President Eisenhower for a limit on groundfish imports of 37 percent of average aggregate consumption for the five years before and for higher tariffs on that quota. The President rejected the Commission's recommendations. In his letter of explanation the President wrote that in the months after the Commission prepared its report, a new product, fish sticks, had been introduced which could help the fishing industry. "I am firmly convinced that it would be a disservice to the long-run interests of the entire groundfish industry to limit the imports of groundfish fillets in these circumstances," he said. "Such action would reduce raw material supplies of processors of fish sticks. It would create an artificial scarcity and tend to increase price. At the same time it would hamper and limit the development of the market for the product [fish sticks] and jeopardize present prospects for the increase in per capita consumption of fish, which is the key to a real solution of the industry's problem."[18]

The President's assessment of the reception fish sticks would have among consumers reflected the views of fish stick producers. The Birds Eye Division of General Foods had announced the new product in October

1953. Herbert N. Stevens, the Birds Eye product manager, called the development of fish sticks the most outstanding in the fishing industry since the introduction of quick freezing by Birds Eye in the 1930s. "We believe this important step in the fishing industry might point the way as a means to help increase the per capita consumption of fish in this country, and thus create an important incentive to the American fishing industry," Stevens said. Fish sticks had this potential because they eliminated the problems thought to be associated with handling and cooking of fresh fish which, Stevens said, prejudiced homemakers against fish.[19] Fish sticks, breaded and pre-fried, offered uniform quality and the convenience of little or no preparation.

Assessments of the potential popularity of fish sticks proved correct. In 1953 fish stick production totaled only 7.5 million pounds. By 1955 production reached 63 million pounds, almost all processed in New England. Predictions about the effect of fish sticks on per capita consumption were wrong, however, or other influences such as changes in the price of meat or changes in personal income eliminated the increase. Consumption of fish declined from 11.4 pounds per capita in 1953 to 10.5 pounds in 1955. The per capita consumption of fresh and frozen fish, the category which included fish sticks, absorbed half the decline; it fell from 6.4 to 5.9 pounds per capita by 1955. Because fish stick consumption increased, the per capita consumption of other fresh and frozen products decreased more than the net decline indicated.[20]

The effects of the growth of the fish stick industry on the level of consumption of fish in the United States were difficult to guess as fish sticks entered the market; it was understandable that the assessments were wrong. However, the impact of the growth of fish sticks on the problems of the New England fishing industry should not have been hard to predict. The groups who had appealed to Congress, the Tariff Commission, and other offices concerned with imports had no connection with the fish stick industry.[21]

Large processing firms such as General Seafoods, Gorton-Pew, and Booth Fisheries, produced most fish sticks. These firms had owned fishing vessels in addition to processing facilities before and during World War II. Even before the introduction of fish sticks, however, the vessel operations had become unprofitable enough that the firms sold some boats and transferred others to Canada where the boats landed fish for the companies' Canadian plants. These companies turned to imports to supply the raw material they used for processing. In 1954 they still used fish from their own boats, but the development of fish sticks made the access to the less expensive imported raw material critical. Frederick McG. Bundy, the president of Gloucester-based Gorton-Pew Fisheries, stated that his company had to have Canadian frozen "blocks" to round out their line. These were large frozen slabs of fish pieces and fillets which could be fed into machines for cutting into fish sticks. Local boats could not supply products at competitive prices, but, in addition, Bundy claimed, they did not supply much haddock and cod at all, principal ingredients for

fish sticks. Gorton-Pew had three plants in Canada by 1956 which processed fresh fish into frozen blocks for shipment to Gloucester for manufacture into fish sticks. Although Bundy and others did not say so, differences in processing costs between Canada and the United States made the use of Gloucester and Boston fillets in fish sticks and the production of blocks in Gloucester using fish from Gloucester and Boston out of the question. Birds Eye had tried to process fish into frozen blocks in Boston but had found it financially impractical.[22] The dilemma was clear. Higher tariffs on the imported fish would disrupt the fish stick business, but in order to take advantage of any of the fish stick boom, the rest of the fishing industry had to have higher tariffs on those raw materials.

Although President Eisenhower's statement reflected the lobbying of fish stick processors, his decision undoubtedly had much to do as well with his administration's philosophy on free trade and with the pressures from countries exporting groundfish to the United States. Eisenhower pursued a policy of reducing trade barriers for non-Communist countries; and higher tariffs on groundfish, almost all imported from Canada and Iceland, were inconsistent with that policy. In addition, the countries the tariffs would have affected protested. After the groundfish industry appealed to the Tariff Commission for the second time, the Canadian government warned the United States in a note to the State Department that any increase in import restrictions on groundfish fillets would have

"serious implications." Canada's development of its fisheries depended on the United States market. The State Department reassured the Canadian government that a recommendation from the Tariff Commission need not be accepted by the President.[23]

Foreign policy influenced the President's decision, but the fish stick processors had considerable clout. Influence of the fish stick producing groups became evident during 1954 in their campaign for tariff protection. When a regional customs official placed fish sticks in the same category as "preserved" fish, covered by a low, flat-rate tariff, rather than "processed" fish, protected by a higher ad valorem fee, the fish stick industry appealed through Senator Leverett Saltonstall of Massachusetts to reverse the decision. The Bureau of Customs ruled, however, that the duty would remain low. Fish stick representatives pushed for new legislation to change the duty. Senator Saltonstall proposed an amendment to a bill to amend the Tariff Act of 1930 which would place an ad valorem tariff of 20 percent on uncooked fish sticks and similar products "if breaded, coated with batter, or similarly prepared" and an ad valorem tariff of 30 percent on cooked fish sticks. Under existing law, Congressman William Bates told the House in his speech of support for the amendment, the tariff on fish sticks was lower than the tariff on raw fish. The domestic industry made every attempt to help itself, but it needed protection from imports, and the bill would ease some of the strain from foreign production.[24] While the fresh groundfish industry had pressured publicly for years for higher tariffs without success despite considerable financial problems, the fish stick interests

obtained high tariffs on fish stick imports without ever appearing in a public hearing or demonstrating that the industry suffered harm.

The importance of foreign policy concerns became clearer when the New England groundfish industry appealed to the Tariff Commission a third time. In late 1956 the Commission ruled unanimously that imports caused serious injury to the domestic industry and recommended higher tariffs. Again the recommendation went to President Eisenhower. By this time no one suggested that the new fish stick production would aid the fishing and filleting sector, but the President rejected the recommendations. In his explanation, the President wrote that while the Tariff Commission investigated the effects of imports on an industry, he had to consider "all other pertinent factors bearing on the security and well-being of the nation." The administration sought to encourage the expansion of trade among free nations, he said, so he was reluctant to impose trade barriers. He was especially reluctant because "the other nations concerned are not only our close friends, but their economic strength is of strategic importance to us in the continuing struggle against the menace of world communism." Instead the industry should seek other ways to improve its competitive position, without the imposition of trade restrictions which "might discourage needed improvements."[25]

The decision attracted wide attention because the administration could use the same argument to deny tariff relief to almost any other industry. This was the first time that the President had said that the economic health of allies took higher priority than the survival of a

domestic industry. Always before he had emphasized that the well-being of domestic industries came ahead of international trade agreements. In the other decisions on groundfish industry tariffs the question had been whether or not the industry was severely injured. Now injury was acknowledged, but no tariffs would be altered.[26]

More factors were involved than the President's statement admitted, however, which made the same decision less likely in other situations. Iceland had demanded that the United States close its military base in that country, but four days before the President's decision, Iceland announced that it was cancelling its request for the withdrawal of U.S. troops. While those outside the efforts to get changes in tariffs speculated about whether this action had anything to do with the President's announcement, fishing industry representatives were convinced it did. James Ackert, a leader in the Atlantic Fishermen's Union, said, "We were told point blank in the White House that the fishing industry is not worth a NATO base."[27]

In the next ten years industry representatives occasionally tried to obtain tariff relief again. For example, in 1961 the Gloucester interests decided to appeal directly to the President for tariff relief to try to change laws more quickly. In 1963 the Gloucester Fisheries Commission, alarmed at the possibility of increasing imports of fresh irradiated fish, passed a resolution calling for import quotas on fresh groundfish. Irradiation promised to extend the shelf life of fresh fish so that Canadian fresh fish could compete with the U.S. product despite the time involved

in trucking the fish from Canada. The resolution received little support. In 1964 the New England Association for the Preservation of the Groundfish Industry, which represented over 75 percent of the processors, dealers, and boat owners in New England, argued before the Tariff Commission against the reduction in tariff rates on groundfish. Groundfish were excluded from GATT negotiations, and tariffs remained essentially the same. In 1967 Congressman William Bates introduced a bill at the request of the Gloucester Fisheries Commission that would increase the tariffs on fresh irradiated fish imports. "The New England fisheries lost the frozen fish industry to imports," Salvatore Favazza, the executive secretary of the Gloucester Fisheries Commission, said, "but hopes by these means to hold on to the major part of the fresh fish industry." The same year most of the Massachusetts congressmen from coastal communities introduced legislation to increase tariffs on groundfish imports in response to pressures from those who were not satisfied to concentrate on the fresh imports. Neither measure passed Congress.[28]

Although the New England fishing industry representatives continued to pay attention to tariffs, no efforts after 1956 equalled the three appeals to the Tariff Commission either in single-mindedness or in hopefulness. Much of the tariff-related work after 1956, even when it called for higher tariffs, seemed directed at keeping the problems of the fisheries in front of Congress and the Tariff Commission so that the United States would not make still more tariff concessions on groundfish and at making sure that foreign countries obeyed the trade regulations that kept products from

coming in at even lower prices.[29] The fishing representatives turned most of their energies to finding other ways to help the industry.

Even though the campaigns for tariff changes in the early 1950s did not result in the higher tariffs and stricter quotas which the New England industry wanted, the work had several very important results that developed over the period after 1950 with implications for the success of attempts to obtain other kinds of aid. In 1949 few outside the industry had felt concern about the difficulties of the New England fishing industry. By 1954, however, many in Congress believed the industry's claims that it suffered from imports which caused loss of jobs and income for fishermen, vessel owners, and processors. By 1956 nearly everyone agreed that the fishing industry faced serious problems. The problems could worsen, most believed.

Furthermore, the Tariff Commission decisions of 1954 and 1956 provided the groundfish industry with strong arguments for government aid. The decisions proved imports hurt the groundfish industry. "Why should one industry bear the burden of providing for the nation's security?" industry spokesmen asked again and again. The rest of the country should shoulder some of the load through tax-supported programs to help the groundfish industry. As fishing spokesmen pointed out, the President himself in his rejection of recommendations for higher tariffs in 1956 had suggested that the industry look for other ways to obtain help. Congressmen whose districts were affected by the decision favored that approach. They asked fishing industry leaders what Congress could do for them.

By the mid-1950s Congress seemed to believe that the federal government should help the New England fishing industry.[30]

In 1949 fishing industry spokesmen had been novices in efforts to influence government decisions. By 1956 they were well known to the legislators on the committees which dealt with fishing-related bills, and they knew the administrative routes for accomplishing their aims. They had gained valuable experience in lobbying and testifying. Furthermore, congressmen knew what to expect from the information they provided to committees. The route was paved for a variety of attempts to aid the fishing industry.

Government Efforts to Aid the Groundfish Industry

In the efforts that followed, from 1954 through the late 1960s, the federal government passed major legislation and funded important aid programs. These were certainly not the only efforts. The industry worked to solve problems independently of government. For example, groups of vessel owners cooperated in efforts to find ways to reduce insurance costs. Boston dealers organized a short-lived "cooperative" to work on marketing and advertising.[31]

State and city governments set up programs for the fishing industry, too. In most cases state groups investigated problems and made recommendations to government or industry on ways to solve problems inside territorial waters. Sometimes states conducted some fishery research on resources under state jurisdiction. For example, in Massachusetts,

Governor Christian Herter set up a commission in 1954 of representatives from the state government, the seafood workers' unions, the Atlantic Fishermen's Union, and the associations of vessel owners, dealers, and fish processors to promote the interests of the fishing industry and to study its problems. They met for several years and considered a range of industry problems. The governor of Massachusetts set up a marine fisheries advisory commission in 1960 to help formulate a fisheries policy for the state, make recommendations to improve state programs, and receive and consider proposals related to marine fisheries.[32] Most recommendations from the commission and whatever state actions that followed affected inshore fisheries much more than the offshore groundfish industry.

The Gloucester City Council established the Gloucester Fisheries Commission, according to Mayor Beatrice Corliss, "to follow continually the progress of the fishing industry and to recommend such action as becomes necessary to further the prosperity of the fishing industry and, thereby, Gloucester as a whole."[33] The Commission became more than that. Under executive secretary Salvatore Favazza, the Commission initiated federal legislation through Congressman William Bates, lobbied on fishery issues, put out information on the Gloucester fishing industry, and watched and commented on all events related to fishing. The Commission became a leader in efforts to solve fishery problems in Gloucester, the problems of the offshore groundfish industry.

The state and local efforts did not subsidize the fishermen, vessel owners, or processors, However, some programs, such as the Herter commission studies and the work of the Gloucester Fisheries Commission helped to organize the fishing industry to press for federal legislation. These commissions provided the medium for representatives of the fishing industry to meet for discussion of common problems and goals and to plan efforts to get federal action. The commissions provided some staff assistance and, in the case of the Gloucester Fisheries Commission, a paid, full-time leader for political efforts, vital when many other spokesmen could only do political work as extracurricular activity outside their principal responsibilities.

The significant aid programs came from the federal government. Starting in 1954 the federal government passed legislation addressed at solving the problems of the New England fisheries. Legislation evolved from programs that had little direct relation to the fisherman, the boat operator, or the processor to enormous government subsidies that had a substantial effect on those who received them. The first laws provided funds for research and reorganized the administration of fishery affairs. In 1956 legislation offered loans to vessel owners which involved more direct contact between government and business. Finally, in 1960 Congress set up a program of vessel construction subsidies that meant that government officials examined boat owners' financial information and that boat operators who applied for funds had to deal with many government administrators for several years and follow rules about vessel

construction and fishing activity that interfered with their accustomed autonomy.[34]

The groundfish industry had several alternatives for efforts to get federal government assistance to solve or relieve their problems without tariffs. They could seek programs to expand the market for fish. If demand were greater, price and revenue would rise, and since income was a share of the revenue from the catch, New England producers might be better off unless imports increased substantially to hold price at the same level, below the point where many boats could remain in business. It might be possible to increase the demand for New England fish, however, without expanding the market for fish from other countries, especially if the federal or state governments were the source of the increased demand.

Fishing industry representatives could also seek programs to lower the costs of fishing so that the amount subtracted from gross stock would be smaller and the incomes of fishermen and boat owners higher even if price and total revenue remained the same. These programs could aim at lowering certain costs of harvesting or at increasing the efficiency of boat operators to reduce the cost for the same catch. Programs could attempt to lower the costs of production for the processors, too, so that their profits would rise.

From 1954 through the late 1960s most of the government programs aimed at reducing the costs of boat operations. This reflected the direction and unity of fishing interests as well as congressional sentiments

about subsidies to industry. Industry representatives expressed more concern about their costs than about the market for their product. Soon after the 1956 tariff decision, the New England Committee for Aid to the Groundfish Industry outlined a four-point program. They asked for aid to reduce the cost of vessel insurance; long-term loans to dealers and processors for modernization, expansion, and working capital; aid to equalize the cost of vessel construction in the U.S. and overseas; and funds to eliminate the differential between the cost of domestic fillet production and the selling price of imports in the domestic market.[35] With a few changes this remained their agenda.

When bills included provisions for loans or subsidies to processors, large numbers of processors outside the fresh groundfish sector opposed the legislation. The representatives of the National Fisheries Institute, the processors' lobby, stated that his members were "violently opposed to Government controls and to Government interference of any kind in the operation of their business." They feared such interference from a bill supported by the groundfish industry to pay processing plants up to a third of a cent per pound of fish handled. "Soft loans," they said, could also be the beginning of extensive federal government involvement, a "Pandora's box." C.L. Stinson of Stinson Canning Company, one of the largest sardine packing firms in Maine, opposed payments to firms because too many plants already processed herring. The tuna canners considered it "unthinkable" that the federal government should add to their competition.[36]

Loans and subsidies to boat owners, on the other hand, met almost no opposition from the industry. When congressmen suggested that government should not subsidize industry at all, the groundfish representatives contrasted aid to fishing with the enormous funds flowing to agriculture, cited U.S. assistance to fishing industries in other countries, or pointed out that instead of a subsidy they would be content to purchase vessels overseas rather than from more expensive domestic boat builders as required by law.[37]

The programs that began in 1954 covered a range of approaches and had a variety of results. Some had virtually no effect on any segment of the industry. Some aimed to relieve the New England industry's problems and touched sectors that were not having trouble. Other programs affected the offshore groundfish industry and may have helped some of the individuals in the business. No program nor all the programs combined halted the offshore groundfish industry's decline.

Increasing the Demand for Fishery Products

Concern about the ways problems of the New England fishing industry related to inadequate demand for fishery products contributed to passage of the 1954 Saltonstall-Kennedy Act to "encourage the distribution of domestic fishery products." The legislation allocated a percent of the revenues from duties on fishery products to the Secretary of the Interior to promote the flow of domestic fish products through a fishery education service and fishery research, to develop and increase markets for domestic

fishery products, and to conduct any other research related to U.S. fisheries.[38] The majority of efforts to increase the demand for fish received funding under this legislation.

Under Saltonstall-Kennedy, the Bureau of Commercial Fisheries established voluntary guidelines for fishery sanitation and product inspection which would improve the quality of the product landed by the New England boats. Industry and Bureau representatives believed that consumers' experience with deteriorating fish kept demand low; if quality were improved, more people would buy fresh fish more often. Starting in 1957 Bureau staff publicized the guidelines widely, visited processing plants, and went to sea on fishing boats to show processors and fishermen how they could improve their methods of handling fish. The suggestions had little effect on the behavior of most fishermen and processors, according to Jacob Dykstra, president of the Point Judith Fishermen's Cooperative. Only minimal requirements enforced by the Food and Drug Administration and state inspectors in shore plants influenced operations. Vessel owners and processors who had trouble making a profit could not pay for new equipment or maintenance to improve sanitation even though they might support such a program's intent. At least some fish plant operators felt that they could make as much money selling bad fish as good and did not care about quality, according to an expert on nutrition from the Massachusetts Institute of Technology.[39]

The failure of such efforts showed more clearly when Congress proposed legislation to control quality. In 1967 congressmen concerned about

protection of consumers from food poisoning in fish introduced bills to increase inspection and grading of domestic products. They said that improvement in quality would also make fish more attractive to consumers and would, therefore, help the fishing industry. Spokesmen for the fishing industry disagreed. According to Jacob Dykstra, the legislation would not provide substantial consumer benefit or increase the movement of domestic products. Instead, he said, "it is our experience that regulation and restriction can only result in increased cost of harvest and production thereby reducing our ability to compete in the marketplace." The Gloucester Fisheries Commission observed that "unnecessarily high standards" would force many vessels out of business particularly since the legislation would not affect imported fish. New Bedford boat owners said they would support the legislation only if the same rules applied to imported fish.[40] The opposition to required standards suggested how rarely fishermen and dealers observed the voluntary ones.

Efforts to increase demand took other directions. Research, most of it under Saltonstall-Kennedy, sought to learn more about the markets for fish. Surveys reported on fish preferences and consumption patterns in different areas of the country by demographic groups. These studies did not include recommendations for ways to increase demand, but industry representatives could study the reports in deciding on the best strategies for advertising.[41]

Other efforts were more direct. For example, the Bureau of Commercial Fisheries subcontracted a study of problems in the marketing of

New England fishery products, the results of which were to be turned over to the New England Committee for Aid to the Groundfish Industry for action. The Bureau of Commercial Fisheries ran market development programs. Staff sought to educate food specialists and consumers about new types of fish and different ways to prepare fish.[42]

Fishing industry representatives tried to persuade state and federal governments to purchase more domestic fish products. After President Eisenhower rejected the Tariff Commission recommendations in 1956, the Veterans Administration announced that it would increase the use of frozen fish fillets in hospitals. Some Saltonstall-Kennedy funds expanded the use of fish in school lunch programs. In 1968 Governor John Volpe of Massachusetts announced that the state would purchase only domestically caught and processed fish.[43] In some cases, the school lunch program, for example, the program purchased U.S. processed fish, fish sticks, which did not help domestic fishermen, boat owners, or fresh fish processors at all.

Fishing industry spokesmen suggested occasionally that they wanted a guaranteed price for their product, and sometimes congressmen announced that they favored a price support program for the fishing industry. The government would have purchased large volumes of fish that could not be sold at the higher prices.[44] Fishing industry representatives never pressed hard for this approach, however, and congressmen never pursued legislation.

Although the list of federal efforts to increase demand is fairly long, most work to expand markets took place through private advertising by groups of fish dealers and processors. Government efforts were small next to these and probably had little influence on demand for groundfish.

Reducing the Costs of Production

Federal programs to reduce the costs of fishing played a far more important role in attempts to solve fishing industry problems than the efforts to increase the market for fish. Most of the energy of the industry lobbyists and most congressional debate focused on these approaches through the 1950s and the 1960s. The work produced several major programs, although the package of programs did not have the same emphases as the industry representatives' statements about what they considered important.

1. Efforts to Lower Insurance Costs

The groundfish industry boat owners were particularly concerned about the rising costs of insurance for boats and for crew. In 1957 the Gloucester Fisheries Commission decided to concentrate all attention on getting government relief from high insurance rates. Gloucester vessel owners met to draft proposals for the Secretary of the Interior on ways to deal with insurance problems as their premiums rose as much as 100 percent in one year. The Herter committee to study the problems of the fishing industry discussed high insurance premiums and the difficulties of obtaining any coverage at one of its earliest meetings.[46]

In response to industry concern, the Fish and Wildlife Service, later the Bureau of Commercial Fisheries, sponsored a study under Saltonstall-Kennedy to find out the reasons for accidents and to explain the high insurance rates. They developed a vessel safety program for New England in 1959 which provided information on how to solve safety problems. Vessel owners and fishermen could make changes in boat features or in operations to reduce the number of injuries and damage to the boat and, therefore, reduce insurance premiums. The Bureau of Commercial Fisheries gave demonstrations of safety equipment and issued marine safety bulletins on a range of subjects. According to the Bureau of Commercial Fisheries these programs led to safer fishing practices and installation of more safety equipment. The Bureau of Commercial Fisheries worked with the Department of Labor to develop a safety education program for fishermen training programs. The Bureau believed that the fishermen who took the course had fewer injuries.[46]

The groundfish industry, however, wanted direct financial assistance from the federal government to cover or reduce insurance costs. Congress occasionally debated bills to provide lower cost insurance, but these did not pass.[47]

Perhaps the Bureau of Commercial Fisheries's safety programs slowed the increase in insurance costs, but expenses did continue to increase. By 1964 insurance was about 50 percent of the fixed costs of vessel operations in the Boston groundfish fleet. Insurance cost about the same as provisions for the crew. Older vessels had higher insurance

costs and greater increases in insurance costs than newer ones. Wooden vessels had higher rates which increased faster than those of steel boats.[48] Groundfish vessels were generally old and constructed of wood.

Perhaps most important for understanding the reasons for insurance rates that continued to rise, the cost of insurance declined for groundfish vessels with the best profit records between 1953 and 1957 among one sample of boats. All the vessels with consistently poor operating experience between 1953 and 1957 had substantial increases in insurance costs. Marine insurance brokers said that they considered earnings along with factors such as level of boat maintenance, loss record, and quality of management in negotiating new insurance contracts. Vessels with better earnings records had fewer hull insurance claims. Perhaps boat owners with deficits postponed important maintenance expenses or intensified fishing operations to raise receipts and, therefore, had more claims. In addition, owners in financial difficulty may have seen the insurance contract as a way to recoup some losses. If they damaged or sank their boats, they could realize some gain as they went out of business. Twenty-nine percent of hull insurance claims in New England from 1950 through 1954 resulted from striking an ambiguous "submerged object."[49]

The Bureau of Commercial Fisheries's safety program may have helped the boats that were already doing well and had the lowest insurance costs. They had profits to use for installation of new safety features which the program could teach them about. New vessels, built by those doing best in the groundfish industry, did have much of the new safety

equipment. In the New England groundfish fleet, however, the majority of boats had low receipts. They probably could not afford to make extra expenditures for safety equipment when they could not maintain their boats; therefore, the Bureau's program probably could not affect the costs of their insurance.

2. Training Programs to Attract Young Fishermen

Industry representatives felt that another factor that raised their costs was difficulty attracting young men as fishermen. "This prospective field of employment has been sadly neglected," said Thomas Rice on behalf of Boston vessel owner-dealers. "We are suffering today because of this neglect. The average age of the fishermen working out of the port of Boston is 59 years of age." Younger fishermen with special training in fishing skills would add to the efficiency of work on the boats, he and others said, but young people did not seek jobs.[50]

In 1956 Congress passed legislation that provided money for vocational education for fishermen. Drawing on some of these funds, Gloucester Vocational School set up a three-year fishing and vessel management course for high school students. The director of the program estimated that about half the students who enrolled might become fishermen, or between four and six students per year. In Maine, state and federal funds helped support the Marine Vocational Technical Institute in training fishermen.[51]

In 1963 the Atlantic Fishermen's Union arranged an on-the-job training program under the Manpower Development and Training Act to

provide fishermen for the groundfish fleets in Boston and Gloucester. By 1965 almost 50 men had graduated from the training program out of 110 enrollees, not a bad record, according to some, because at least one of the courses took place at sea during stormy fall months. Fifty percent of the fishermen who graduated, however, quit after a few trips because they could only get sites on the boats with the lowest incomes, poorest living quarters, and worst safety records, just as other fishermen entering the fleet would. Vessels with higher earnings had no problem finding crews among more experienced fishermen, and highliner captains did not consider the younger fishermen more desirable crew than others. To the young trainees the groundfish fleet looked particularly unattractive. As one fisherman who went through the union-MDTA program in Gloucester said, "I started in Gloucester on groundfish boats. It took me less than a year to realize the money to be made at the time was in the New Bedford yellowtail flounder industry . . . and I joined." The training programs probably had almost no effect on the composition of the fishermen in the groundfish fleet.[52]

3. Research and Development

Vessel owners and processors wanted the federal government to assume the costs of research and development in fisheries. In 1954 Thomas Fulham outlined a lengthy research agenda for the Senate committee considering the Saltonstall-Kennedy bill. The New England Fisheries Committee, made up of representatives of fishery associations and state and local government agencies, developed the list of projects. These

covered biological and oceanographic research to find ways to sustain the yield from fish stocks; a statistics program to improve information for biologists and provide market news to the industry; exploratory fishing and gear development to find new concentrations of fish resources and more efficient ways to harvest them; and a search for better ways to preserve, process, distribute, and market fish and for new uses for underutilized species and fish wastes.[53]

Before 1954 the Fish and Wildlife Service had already conducted a substantial amount of research. The most highly publicized studies which touched the groundfish industry in the early postwar period developed the technology for freezing fish at sea. With passage of the Saltonstall-Kennedy Act, the federal government provided much more funding for such projects, and the Fish and Wildlife Service conducted more studies and contracted for more research. In the next few years, for example, market news and statistics coverage expanded; biologists studied the growth and spawning characteristics of popular species and the environmental conditions influencing the abundance of Atlantic groundfish; Bureau of Commercial Fisheries research vessels studied the effects of larger mesh on the composition of the catch; economists looked at the feasibility of freezing fish at sea.[54]

In 1956 legislation provided funds for training researchers and technologists in fishing-related affairs. The tradition of government-funded fish research continued in the 1960s with the Commercial Fisheries Research and Development Act of 1964 which provided funds to match

state money for fishery research. In 1966 Congress passed the National Sea Grant College and Program Act to promote research, education, training, and advisory service activities related to use of ocean and coastal resources. Other sources of funds, such as Economic Development Administration money, have been tapped by groups in the fishing industry for further applied research.[55]

In the years after 1954, government-funded research had some relation to most of the changes in vessel technology, use of new species, or handling of traditional species. Most parts of the fishing industry benefited. For example, state-funded research in Maine developed better lobster holding pens. National Marine Fisheries Service (successor to the Bureau of Commercial Fisheries) researchers cooperated with firms entering the new red crab industry to provide biological background information and to test new types of gear.[56]

The relation of new research to the welfare of the groundfish industry, however, is difficult to assess. Federal and state governments undoubtedly conducted more fishery research than could the smaller vessel-owning and processing firms of the groundfish industry. Government studies along with a boat builder's experiments evaluated the efficiency of stern trawling compared to side trawling for groundfishing. Stern trawling made groundfishing more efficient and safer; it was the most important innovation for groundfish vessels in the 1960s. On the

other hand, fishermen and boat owners seldom took advantage of research that suggested ways to sustain the yield of fish stock except when government enforced regulations.[57]

4. Vessel Construction and Repair: Fishery Loan Fund

The most important efforts to reduce costs for the groundfish industry addressed the expenses of vessel construction and repair. In 1956 industry representatives argued that while higher tariffs would solve their problems permanently, they needed loans for vessel repair and maintenance for help in the meantime. No bank would make loans to boats, a Gloucester city councillor reported, because, bankers said, "We don't want to own the boat and we know the minute we loan you the money we are eventually going to own the boat."[58]

Later, after the President rejected the 1956 Tariff Commission recommendations, the fishing industry sought subsidies for boat construction. Thomas Fulham explained to congressmen that even when boat operators made a profit, they would not purchase new boats because "A fishing trawler cannot be operated profitably on the base cost of a new vessel." If boats were fully up-to-date, the industry might be able to compete with imports, Donald McKernan, the director of the Bureau of Commercial Fisheries, believed. Insurance and repair costs would be lower for new boats, so boat owners could meet operating expenses more easily, spokesmen for the fishing industry argued. However, construction

of vessels cost so much more in the United States than in foreign countries that vessel owners had to have help to pay for boats.[59]

The Fish and Wildlife Act of 1956 provided loans for financing and refinancing the operation, maintenance, replacement, repair, and equipment of fishing vessels and gear for boat owners who could not obtain loans elsewhere. Boat owners had to be able to pay back the loan in the ten years the law specified.[60] In other words, Congress believed a capital shortage existed for the fishing industry; conventional financing sources did not fill the demand from good credit risks because the private market suppliers overestimated the risk and because the stricter terms of private financing made repayment more difficult.

In the early years of the program, the loans had some effects on the offshore groundfish industry whose difficulties had been a major reason for passage of the legislation. In 1958 representatives of the fishing industry told Congress that the loans served as a good stopgap measure. Gloucester boat owners had made extensive use of loans to keep their boats going until the federal government could do something that would really help. According to Mayor Corliss of Gloucester, "If it had not been for this, the fishing industry would have been in one chaotic mess. Without it, we would not have held on this long." The Bureau of Commercial Fisheries agreed with the fishing industry representatives. Donald McKernan said that Gloucester had received more funds than any other port and that more loans had gone to New England than to any other

region. New England boat owners received 85 loans, a third of the total value of loans.[61]

By 1965 the Bureau of Commercial Fisheries had approved 166 loans for $4,380,000 in New England. About 50 percent of the loans had been under $10,000. Massachusetts boat owners had received 102 loans totalling $3,600,000. The loans helped large numbers of small vessel operators, according to Donald McKernan.[62] Small vessel operators, however, were inshore fishermen, boat owners who did not face severe problems as a group and who had had no role in lobbying for the legislation. These boat owners undoubtedly included many not involved in groundfisheries. The largest share of the loans were, therefore, not dealing with problems for which the program had been established.

The full record of the program showed the extent of these tendencies. The Fishery Loan Fund served approximately 350 boat owners in New England between 1957 and 1973, but only 75 to 100 of the loans went to offshore boats, and perhaps between a quarter and a third of these boats came from the prosperous scallop and flounder fisheries of New Bedford. The majority of loans in New England aided the construction of small boats, especially Maine lobster boats.[63]

The distribution of loans had plausible explanation. Inshore lobstering prospered and grew during the 1950s and 1960s. Many new boats entered the fishery without assistance. Boat owners who found the program most attractive may already have been contemplating new construction, major repairs, or rehabilitation. The programs may have

provided owners with a financial break for new boats that they would have bought anyway or could have been the final deciding factor in making an investment. One indication that the loan fund worked this way was that many lobstermen who applied for loans for new boats withdrew their applications when they saw the paperwork required. They paid for their boats out of family resources.[64] Although they could not get a loan from another financial institution, as required for program eligibility, they could buy new boats without the loans.

The financial statements of owners from prosperous fisheries must have looked better to loan officers than those of most groundfish boat owners. Loans to offshore groundfish boats were bad risks even for the fisheries loan fund. Because the law required that the loans be repaid, the loan fund had "not been soft enough to help many fishermen and boat owners in New England. . . . There was not enough chance of repayment to take the chance on giving them a loan," McKernan said.[65]

The history of loan fund foreclosures showed that groundfish vessels often failed to repay loans. The list of loans foreclosed by the Bureau of Commercial Fisheries which McKernan gave to Congress in 1961 showed that one Boston owner had defaulted. The rest of the defaults in New England came from Gloucester. Offshore groundfish boats dominated both ports. Later, as defaults became a more serious problem for the loan fund, National Marine Fisheries Service analysts found that 20 percent of the fund's losses came from New England boats. About 25 percent of all loans were in foreclosure, but at least a third of loans

to New England groundfish boats were among these. The most common reasons for default were low catches, high insurance rates, crew problems, and more extensive repairs needed, many of the same problems which groundfish boat owners had always cited. In an ironic twist considering the reasons for passage of the loan fund legislation, the NMFS study recommended that loans be denied to boats in fisheries with resource problems, such as the New England groundfish industry.[66]

Individual groundfish boats did profit from the loan program. Some boats earned more than they would have without the loan, according to another National Marine Fisheries Service study, because the loans went for changes in the physical condition of the boats which made fishing more efficient.[67] Even if the loan fund helped a few vessels in the offshore groundfish industry, the loans certainly had little effect on the overall problems of the offshore groundfish industry, the central problems of the New England fishing industry.

5. Vessel Construction: Mortgage Insurance and Construction Subsidies

The Fish and Wildlife Act of 1956 also authorized the Bureau of Commercial Fisheries to provide mortgage and loan insurance for construction, reconstruction, or reconditioning of fishing vessels. The Bureau of Commercial Fisheries did not implement the program until 1960 because of administrative problems and lack of funding. In 1960 the director of the Bureau of Commercial Fisheries predicted that owners would build at least six new trawlers almost immediately if funds were available to ease the tight money supply. By 1965 eight vessels in the

New England groundfish industry had received mortgage insurance to cover financing worth nearly $870,000, always in combination with a vessel construction subsidy. These boats were large enough to fish offshore. Two scallopers received mortgage insurance before 1965.[68] If the program insured the mortgages of boats which would not have received financing otherwise, then the program had some effect on the offshore groundfish fleet. Consideration of the vessel construction subsidy programs' effects, which the mortgage insurance complemented, suggests that results were rather small, however.

In 1960 Congress passed legislation which provided vessel construction subsidies to cover the difference in the cost of boat construction in the U.S. and abroad up to a third of the total cost of a boat. The law required that any boat that received a subsidy had to operate in a fishery harmed or threatened with injury by imports.[69] As a result, only New England groundfish vessels were eligible for the funds.

Between 1960 and 1963 when amendments altered the terms of the subsidy, only six applications for funds had been approved. Three subsidy boats fished out of New Bedford, two out of Boston, and one out of Rockland, Maine. No Gloucester boat owners had even applied for subsidy. Salvatore Favazza, the executive secretary of the Gloucester Fisheries Commission, believed Gloucester fishermen and boat owners had not shown interest in the program because of "misunderstandings as to the working of the subsidy."[70] Gloucester fishermen had taken advantage of the loan fund, however, and Gloucester interests had lobbied for

the subsidy legislation. More likely than "misunderstandings," fishermen and boat owners could not raise their share of the capital; or the income prospects for groundfish vessels did not seem good enough, even with the subsidy, to make it worthwhile to take advantage of the funds.[71] In contrast, in the more prosperous port of New Bedford where very few boats engaged in groundfishing but fishermen and boat owners had more capital to invest in fishing, more boat owners took advantage of the subsidy.

The subsidy did not make boat construction easy. Thomas A. Fulham and others with interests in the Boston fishing industry formed the Boston Fishing Company to try to bring the "Massachusetts" to Boston, the first new boat in fourteen years. Fish dealers, cold storage operators, oil suppliers, gear and equipment suppliers, restaurant owners, and mechanics and other tradesmen who felt they knew about fishing joined the venture. "I doubt seriously," Fulham said, "if any group in the country could duplicate the cost control exercised in this venture." He explained their methods: "In all respects, she is an excellent vessel built from a proven design, constructed of improved materials and modernized machinery. . . . There is nothing new or exciting, nor are there any unique features which will enhance our national prestige or aid us in assuming a proud posture among the fishing nations of the world. In short, to do that would have been so costly that the project would never have gotten off the ground. . . . None of the customary legal fees, travel, office expense, management, or

promotional expenses were paid. The vessel design, which is normally a significant percentage of the cost, was provided at no cost. Even the shipyard owner was persuaded to build a sister ship for a company in which it had an interest to lessen further the costs of construction." Not many groups, he said, would be willing to work without wages and without a more assured return on investment to build a fishing boat, but this approach was necessary given conditions in the groundfish industry and the terms of the subsidy.[72]

In 1964 Congress passed the Fishing Fleet Improvement Act which amended the earlier legislation to provide for a larger subsidy, up to 50 percent of the cost of construction, to cover the difference between foreign and domestic boat building costs. The new law allowed owners to use the subsidy for boats in any fishery as long as new boats would not "cause economic hardship to efficient vessel operators" already in the fishery. The law required subsidized vessels to be of advanced design and equipped with new kinds of gear to allow them to operate in "expanded areas."[73]

By 1969 32 boats had been constructed under the subsidy. Fifteen of these operated out of New England ports. Ten of the fifteen were scallopers for New Bedford. Five went into the groundfish fisheries: one in New Bedford, one in Gloucester, one in Boston, one in Rockland, and one for a company in New York City which planned to operate the boat out of Gloucester. As with the loan fund, a particularly prosperous sector of the New England fishing industry, this time the New Bedford scallop

fleet, took most advantage of the funds. Before the revisions in the subsidy law, one New Bedford boat owner protested that New Bedford did not need subsidies because, among other reasons, about four new boats entered the fleet without subsidies every year. As of 1975 eighteen offshore boats operated out of New Bedford which had been built before the subsidy became available to scallopers, between 1960 and 1964.[74] Probably boat owners would have built most of the subsidized scallopers without the federal money. This was probably not true of boats in the groundfish industry where only a few boats entered the fishery without subsidy. The total addition to the groundfish fleet was very small, however, nowhere near the original goal of complete replacement of the offshore boats.

Even if groundfish boat owners had applied for funds in larger numbers and if the Bureau of Commercial Fisheries and the Maritime Administration had favored their applications over all others, the program would not have replaced the offshore groundfish fleet. The program never received enough funding to do so.

Representatives of Boston's groundfish industry, Thomas Rice and Thomas Fulham, estimated that replacement of the groundfish fleet over ten years could cost $10 to $15 million. A group of Boston Fish Pier leaders had announced in 1958 that they would try to build twenty new offshore trawlers of 180 gross tons for Boston over ten years at a cost of $200,000 each. The estimate Rice and Fulham offered presumably

drew on that plan and included the replacement of many more boats from Boston, Gloucester, and Portland.[75]

Congress authorized $2.5 million per year for three years in the subsidy legislation but appropriated only $750,000 for fiscal years 1961 through 1964 in response to small requests from the Bureau of Commercial Fisheries. The Bureau spent much less than the appropriation in every year. In fiscal year 1961 no funds went for boat construction. In fiscal year 1963 only about $93,000 went for subsidies. In both fiscal year 1962 and fiscal year 1964 the Bureau spent between $400,000 and $500,000 for the new boats.[76]

In 1963 when the construction subsidy program expanded to cover all fisheries, Congress authorized $10 million per year. Appropriations amounted to much less, however, although they met the Bureau of Commercial Fisheries's requests. In fiscal year 1965, the first year under the expanded program, Congress allocated $2.5 million for boat construction subsidies, but the Bureau used only $157,000 for boat payments out of a total subsidy program budget of $395,000. Congress appropriated $5 million, $3 million, $6 million, and $6 million in fiscal years 1966 through 1969, never close to the authorized $10 million. Bureau expenditures in those fiscal years equalled the allocation received. At hearings before the House Committee on Appropriations in 1969, Representative Julia Hansen asked the Director of the Bureau of Commercial Fisheries, Harold Crowther, why the Bureau had never asked for the

full authorization. Crowther's explanation provided no insight into the past: "the austerity program we are under and . . . we must operate under a ceiling."[77]

If Rice and Fulham's original estimates were correct, then the first subsidy program's authorization from Congress would have allowed for construction of a large number of boats if the program continued long enough. The funds which Congress appropriated and the amounts the Bureau of Commercial Fisheries used could not do so.

However, Rice and Fulham's estimates, if valid for the costs of an offshore fishing vessel in 1959, were very low in the 1960s under the terms of the subsidy programs. The boat which Fulham's group of Boston groundfish industry interests brought into the fishery in 1962, with a displacement of 239 gross tons, a third greater than the boats planned in 1958, cost $462,000 even under stringent cost controls. A boat designer estimated in 1965 that a 100-foot steel boat cost about $400,000, a 100-foot wooden one $280,000. The requirements of the subsidy program accounted for part of the increase in boat costs. Features such as mine detectors, which the Navy wanted for the boats' use in war, added to the expense. Inflation in the cost of steel and other inputs added substantially to boat costs in the 1960s. By 1970 the same boat cost at least 50 percent more than it did in 1960.[78]

By the mid to late 1960s, however, no one seemed to assess the subsidy program against the original goal, replacing the offshore groundfish fleet with vessels whose costs compared favorably with foreign vessels' costs. By that time, programs to help the industry "meet foreign competition" meant something new. The goals of the subsidy program had changed. In the 1950s meeting foreign competition had meant that the fishing industry could make a profit at the same time that it provided a product at prices competitive with imports. By the mid-1960s the phrase meant that the United States fishing fleet regained preeminence among world fisheries. "We were formerly in second place among the fish producers of the world," Donald McKernan emphasized to the House Committee on Merchant Marine and Fisheries. "We are now in fifth place. Our share of the world catch has dropped from 13 to 7 percent in the years since 1956. By way of comparison, since 1947 the Soviet Republic has more than doubled her fish catch." By 1969 such concerns were even more prominent. Edward Garmatz, chairman of the House Committee on Merchant Marine and Fisheries, opened hearings on extension of the Fishing Fleet Improvement Act. "Since the 1940s the United States has slipped from first to sixth place among the leading fishing nations of the world," he said. "We are now outranked by Peru, Japan, Red China, Russia, and Norway, respectively. In view of this deteriorating situation, it is imperative that the Fishing Fleet Improvement Act be extended."[79]

5. "Seafreeze Atlantic"

This perspective produced the most spectacular failure in the history of programs to help the New England fishing industry, "Seafreeze Atlantic." In 1966 American Stern Trawlers, a New York-based subsidiary of American Export Industries, applied for subsidies for two factory trawlers. One, later called "Seafreeze Pacific," was to operate in the bottomfish industry of the north Pacific. The other, "Seafreeze Atlantic," would go to Gloucester for the groundfish industry. They would harvest fish using modern stern trawling methods, and they would also process the fish on board, something no other American boat had succeeded in doing.

Each boat cost close to $6 million by the end of construction in late 1968 and early 1969. Each received a subsidy of about $3 million, 60 percent of the program's authorization, the entire appropriation the year the boats received funding. As of 1969 "Seafreeze Atlantic" cost more than six times as much as the second most expensive subsidy boat in New England, the "Old Colony." It cost more than ten times as much as every other subsidized boat in New England.[80]

"Seafreeze Atlantic" was huge. The boat was 296 feet long. Only one other New England fishing boat compared with it in length, the "Saint Patrick" of Portland, which was 240 feet long. The next longest boats in the fleet were less than half that length. The "Seafreeze Atlantic" displaced 1593 gross tons. The "Saint Patrick" displaced less than a third as much, 458 gross tons; and the next largest boats were only

320 gross tons. Even these were the giants of the offshore fleet. Most offshore boats displaced between 60 and 150 gross tons.[81]

The "Seafreeze" gear and equipment differed from all others, too. "Seafreeze Atlantic" had the newest stern trawling gear. Only a few New England boats, mostly other subsidy boats, were built for stern trawling. Their gear operated on the same principles but was a fraction of the size. "Seafreeze" could adjust the trawling gear for bottom fishing or for midwater trawling for pelagic fish such as herring. Modern foreign boats had such technology, but it was nonexistent in the New England fleet.[82]

"Seafreeze Atlantic"'s second deck was a fish processing factory equipped with more modern equipment than processing plants on shore. Baader machines from West Germany could gut and behead fish at the rate of twenty to thirty fish per minute. Other Baader machines filleted and skinned the fish. The wastes went to a completely automatic fish meal and fish oil plant in the ship's hold. Because of the processing capacity, "Seafreeze Atlantic" could stay at sea for sixty to ninety days.[83]

The Maritime Administration and the Bureau of Commercial Fisheries approved the boats over the objections of others seeking subsidies. Other groups planning to build vessels complained about two boats' taking such a large share of the subsidy funds for one year. However, the attractiveness of boats as good as or better than any foreign vessels won out. "One of the arguments that was presented was that these vessels would be a real test as far as the U.S. fishing fleet is concerned,"

Harold Crowther, the director of the National Marine Fisheries Service, said. "We hear many claims of the need for the U.S. fishing industry to get out on the high seas and compete with foreign fleets such as those of the Soviet Union, Japan, Canada, and others."[84] Other nations fishing thousands of miles from their shores had factory ships which processed large quantities of fish taken back to their countries months later.

"Seafreeze Atlantic" was christened in September 1968 with considerable fanfare. The wife of the governor of Massachusetts broke the champagne bottle over its bow. Donald McKernan and Clarence Pautzke, Acting Assistant Secretary of the Interior for Fish and Wildlife, spoke at the ceremony. Pautzke praised American Stern Trawlers "for their courage in facing many unknown factors in designing, constructing, and operating a vessel so different from anything ever built or used by the U.S. fishing industry. . . . The owners are now ready to accept the proof or disproof of their judgment." McKernan, by then special assistant for fisheries and wildlife to the Secretary of State, compared the venture by American Stern Trawlers to those of the seventeenth-century London merchants who developed trade with the Americas, India, and the East Indies. Harold Crowther, director of the Bureau of Commercial Fisheries, and others saw the effort as much more than a test of the businessmen's judgment. "If this doesn't succeed, we might as well stay on the continental shelf," Crowther said.[85]

American Stern Trawlers called James Ackert from his post as head of the Atlantic Fishermen's Union to captain the ship. He would

command seventeen other officers and fifty-six crewmen, twelve of them fishermen and the rest factory workers. Ackert felt cautious but optimistic. "I thought it would work at first," he says now. At the time he told a reporter, "We will have to learn our way with this equipment. Much of this equipment American fishermen have never seen before, and there will be some mistakes and some will cost a lot of money."[86]

"Seafreeze Atlantic" began its career, however, with several disadvantages to overcome. American Stern Trawlers offered $8000 per year to fishermen and $5200 per year to processing workers with bonuses for extra tonnage of fish. At those salaries, both fishermen and processing workers could find jobs on conventional boats or in plants ashore. Only a few fishermen applied for jobs. "I tried to get them to offer more," Ackert said, "but the accountants said that was the amount the company could pay." Most of those hired, according to Ackert, were unemployed workers who had never been on a fishing boat before.[87]

The management of American Stern Trawlers decided that the ship should follow the foreign fleets in search of groundfish, principally cod, and process it into frozen blocks. For most of the year this meant working among the icebergs off Iceland, Greenland, and Labrador. Ackert told the managers that he thought the boat should stay on the banks off the U.S. shores. He recommended that "Seafreeze" harvest herring on Georges Bank during its first trips to reduce problems of extremely cold weather in the far north and to make shorter trips possible if necessary. U.S. fishermen had never exploited the highly perishable Georges Bank herring

because its quality would be so poor by the time they landed it. The herring might have had a good export market.[88]

"Seafreeze" left for its first trip off Labrador in late fall 1968 to spend several months in the Arctic with untried gear and largely inexperienced crew. The night before he went, Ackert visited a friend who worked for National Marine Fisheries Services. "It's going to fail, isn't it?" Ackert said. "Yes, it is," the friend answered.[89]

Ackert made three trips which he termed "disastrous." The new gear had serious problems. For example, in water thick with ice floes the gear had to be "shot" down the ramp differently to keep ice from getting under the wires which towed the net. Ice under the wires would lift the gear off the bottom. However, when the crew set the gear to get it under the ice, the wires sheared off as the boat turned. Ackert had anticipated these gear problems. They occurred on a smaller scale on any boat using new gear. Usually, the crew could work together to adjust the gear, change the way they operated it, or recommend engineering changes when they came into port.

Problems Ackert saw as insurmountable had to do with the crew. Work was difficult with so many inexperienced workers. In addition, the fishermen and processing workers did not like to stay at sea for so long; they complained and worked badly. Each time the boat came into port, it lost almost all its crew and had to recruit new people. On one trip the crew refused to work because they wanted to go into port. "They mutinied," Ackert says. On the third trip Ackert and eight other members

of the crew caught pneumonia. The boat docked in Canada, and Ackert went home.[90]

Conditions did not improve in the trips that followed. On a trip that began in late March 1969 the confusion about who did what deck work exacerbated problems with the gear. Morale was extremely low. German officers directed the fishing, but most of the fishermen were Portuguese and did not speak good English. The fishermen could not understand the officers' instructions. One crewman had the impression of continual "screaming and hollering" from the captain's loudspeakers and of a nervous crew jumping to do whatever they could without thinking. Large amounts of fish left ungutted too long in pens had to be discarded overboard. One crewman died in an accident with a winch towards the end of April. When the boat went into port to take his body off, most of the crew left.[91]

Nearly every trip in 1969 and all but a few of the others ended as brokers. "Seafreeze Atlantic" returned from its last trip in February 1971 and tied up in Norfolk in April 1971. By the time American Stern Trawlers sold out to new owners in 1974, they had lost $11 million.[92]

Status of the Groundfish Industry and Government Efforts in the Late 1960s

"Seafreeze Atlantic" was the last great effort of the subsidy programs. Few new boats were built after "Seafreeze," and by the time "Seafreeze" started operations, very little funding remained for vessel construction. Congress passed new programs that promised to be less expensive.[93] The major force of the legislative efforts to provide funds to lower the costs of fishing had been lost, however. The failure of the programs to change the condition of the groundfish industry in notable ways probably contributed to this. In addition, however, and more important, the industry perception of the nature of the problems of the fishing industry had completely changed. As a result, pressures from the fishing industry for legislation went in new directions.[94]

Meanwhile, the programs of the 1950s and the first half of the 1960s had not succeeded in halting the offshore groundfish industry's decline. In 1954, the year of the passage of the first aid program, Boston fishermen landed 141 million pounds of groundfish worth almost $10 million. In 1965 they landed only 96 million pounds valued at $10.8 million. The growth in revenue from Boston groundfish landings fell far behind growth and inflation in the rest of the economy. If revenues had kept pace with the rest of the economy, income from groundfish would have been much higher, about $18 million in 1965. In Gloucester the picture was much the same. Landings of groundfish

declined from 115 million pounds in 1954 to 58 million pounds in 1965. The value of the groundfish catch fell from nearly $5 million to $4.6 million.[95]

The programs of the 1950s and 1960s had attacked problems in fragmented fashion, as the review of the efforts suggests. The notion of what the problem was became distorted in policy makers' minds, if not in the industry representatives' views as well, as lobbyists slightly altered the emphases on dimensions of the problems to suit the legislation at hand. By the mid-1960s, quite independently of lobbyist behavior, the definition of the problems voiced by congressmen had little to do with the industry's symptoms or behavior at all. Congressmen's definition of the goal as maintaining U.S. prestige among fishing nations grew out of international relations and national competitiveness. No policy for the fisheries, consisting of an assessment of the problems, a clear goal, and an organized set of ways to attain the goals, existed.

The programs that government had put in place had run into considerable problems in implementation. For the most part, the groundfish industry felt little effect from the efforts.

Even the clearest ideas of the problems, however, voiced in 1949 by the representatives of the fishing industry, underestimated the complexity of the difficulties which the groundfish industry faced. Even if industry and government officials had kept sight of the goals throughout the lives of the programs and had overcome implementation problems, the efforts would not have helped the groundfish industry out of decline.

CHAPTER 4

THE SHORTCOMINGS OF INTERVENTION

As the programs for boat subsidies, loans, research and technical advice, and market development progressed during the 1960s, representatives of the fishing industry, members of Congress, and officials of the Bureau of Commercial Fisheries offered many explanations for the continuing troubles of the New England fishing industry and the failure of the programs to turn its fortunes around. For many in the fishing industry, the lack of tariff protection explained the difficulties. Patrick McHugh, the secretary-treasurer of the Atlantic Fishermen's Union, stated, "There is no doubt in my mind that this whole industry has been sacrificed for the national defense." Others claimed the efforts to help were too small. Senator Leverett Saltonstall of Massachusetts declared in 1965, "Our fishermen have been unable to meet the demand because basically they have been unable to keep abreast with technological advances. . . . Our tariff protection is not adequate . . . we must provide the tools so that our own fishermen may compete with the modern foreign fleets being built by other countries." Harold Crowther, director of the Bureau of Commercial Fisheries, told fishermen that subsidy funds were far too small to rebuild the fishing

fleet. Crowther felt fatalistic: "the continued existence of many problems . . . has become a way of life in the fisheries and we must learn to live with it."[1]

The programs certainly did not fail entirely in efforts to aid the industry. As earlier discussion showed, some of the fishery aid programs undoubtedly produced some positive results. Perhaps they slowed the decline of the offshore groundfish industry. They may have prevented problems or stimulated growth in other sectors of the industry. They might have provided technical understanding or sophistication in political work that helped in handling new problems later.

Results of the programs are almost impossible to analyze completely for several reasons. Records of exactly what the programs did are very poor.[2] However, the most important obstacle in assessing results of the programs is in determining what would have happened without the programs--how much boat investment would have taken place without loans and subsidies, how much research scientists could have accomplished without the federal funding or how fishermen would have fared without some of the government-financed research findings, what the demand for fish would have been without market development efforts. Even if the programs had some successes and produced some positive results, the unsolved problems of the New England groundfish industry continued to dominate the perception of the condition of the New England fishing industry. The programs clearly had not erased those. The

operation of the programs and consideration of the problems that faced the offshore groundfish industry suggest many reasons for that failure.

Problems of Program Design and Administration

As the details of the programs and their histories suggest, the misdirection of programs accounted for some of their ineffectiveness.[3] Several of the programs which Congress established in response to the story of the groundfish industry's problems hardly touched the groundfish industry and provided benefits for other parts of the fishing industry which did not suffer from severe problems. Efforts to increase the demand for fishery products aided the fish dealers and processors who handled imported fish in competition with New England-caught groundfish. Except when buying programs or advertising campaigns resulted in the increase in demand for fresh fish or specifically New England-caught fish, the New England groundfish industry probably felt no effect.

The majority of loans for vessel repair and construction aided small boats rather than offshore groundfish vessels. The vessel construction subsidy programs benefited offshore boats, but most of these entered New Bedford scalloping rather than than the groundfish industry, and by far the largest amount of funds went to the "Seafreeze" fiasco. Construction trends in the fishing industry and the motives of program administrators helped to explain these results. In addition, funding for

the boat construction programs was too low to replace the groundfish fleet even if all subsidies had gone for that purpose.[4]

Another major reason that some programs did not work was that they dealt with symptoms rather than with underlying problems. Insurance costs rose the most for the boats with the worst earnings records. Safety information programs to lower insurance costs did nothing to solve the reasons for difficulties that led to higher insurance.

Efforts to attract young people to fishing through training programs suffered from the same flaws. In the mid-1950s when industry representatives pressed for funds for training, Boston still had so many fishermen available as crew that the union supervised rotation of crews to spread jobs. By the mid-1960s boats with the lowest incomes had trouble finding crew even though the younger fishermen generally did not work full time. Lack of education and other job skills trapped the older men in fishing, but, in addition, they tended to work more and to hold the better sites, those of captain, engineer, or mate or crew on higher-income boats.[5] Training programs could not make young men more willing to accept the rest of the jobs which offered the lowest incomes in the fleet if those men had the flexibility to leave fishing for other jobs or to leave groundfishing for other kinds of fishing. Very low wages as a result of basic industry difficulties accounted for the small numbers of young fishermen.

Ports' Unique Problems

The conception, design, and administration of programs contributed to their failure, but, in addition, efforts to solve the industry's difficulties may have failed to do so partly because no programs addressed or acknowledged the special problems of certain ports. For years congressmen listened to the story of Boston's decline, for example, as a general statement of the ills of the New England groundfish industry. Thomas Fulham, representing the Boston Fish Market Corporation, told the members of the House Committee on Merchant Marine and Fisheries, that in 1958 the average age of large and medium trawlers in Boston was 32 years, very old for boats working in the north Atlantic. Landings at Boston had fallen from 136 million pounds in 1956 to 124 million pounds in 1958. Thomas Rice of the New England Committee for Aid to the Groundfish Industry told the Senate Committee on Commerce much the same story. In 1963 James Ackert, president of the Atlantic Fishermen's Union, told Congress that the number of boats operating out of Boston had decreased from 59 large trawlers in 1947 to 24 in 1962. The number of medium trawlers had declined from 28 in 1947 to 26 in 1962 with considerable fluctuation in numbers through the years.[6] No fishing industry spokesmen or legislators offered explanations for Boston's difficulties or Gloucester's or Portland's as distinct from the overall problems of the industry.

Industry representatives had good reason not to point out the peculiar reasons for particular ports' difficulties. Individual ports were far less likely to get help from Congress than all ports acting together. In addition, some of the reasons for individual ports' problems probably would not have drawn the sympathy of legislators. Nevertheless, the reasons for the problems of local ports may have been important in the failure of the programs to solve the groundfish industry's problems. Boston's case shows why programs probably could not have halted most of Boston's decline.

In 1950 dealers and processors owned nearly all the boats in Boston's offshore fisheries, and dealer-owned trawlers landed up to 80 percent of Boston's annual landings. Vessel owner-dealers had traditionally chosen to maximize the profits in the fish dealing side of their operations before the profits in vessel operations. For every dollar of gross stock these firms earned from the sale of fish from their vessels, they paid about sixty cents to fishermen under the lay arrangements, but for every dollar less which they spent for fish in the Boston auction, they saved a full dollar on their fish dealing operations.[7]

After 1950 the vessel-owning part of the business became more clearly the low profit end of operations. Many dealers increased their purchases of imported frozen fish. Their boats, like others in groundfish, usually did not do well. The development of fish sticks accelerated the trend. Of the vessel owner-dealers operating boats out of Boston in 1949, five produced fish sticks in 1955. They had owned about

twenty-five of the offshore boats in Boston in 1949, two-thirds of the largest trawlers, those over 150 gross tons.[8] For the firms that remained in the fish stick business and relied completely on imported fish blocks for raw materials, ownership of comparatively low-income vessels no longer seemed justifiable. By 1960 fish stick producing firms owned very few of the boats in Boston. The fish stick processors and other dealers sold their boats to fishermen in Gloucester or in Maine, or they transferred their boat operations to Maine or Canada.[9]

The owners of Gloucester boats, in contrast, had different motivations. Families, frequently from Portugal or Sicily with little financial interest in fish dealing or processing at that time but with strong traditional ties to fishing owned a large proportion of the Gloucester boats. Their adjustments to the hard times of the 1950s and 1960s differed from those of Boston boat owner-dealers. They hung onto their boats, took out loans when they could to make repairs which would keep boats going, and tried fishing for different species. While Boston's reliance on haddock and cod remained absolute, Gloucester fishermen diversified.[10]

As some Boston dealers' reliance on Boston fresh fish weakened, several dealers moved out of Boston to new or expanded operations in Canada, Maine, and Gloucester. A long-time observer of the Boston fishing industry from the market news office of the Bureau of Commercial Fisheries believed, "This shows clearly that the problems are not in the overall marketing of fishery products, but that producing these products at Boston is difficult under present cost conditions."[11] Most likely the

trend showed that when a firm expanded into fish stick operations and got out of vessel ownership or just depended more heavily on imports, land and labor costs and access to foreign shipments of fish made Boston unattractive compared to other locations.

Most commonly, the vessel owner-dealers argued that they left Boston because of labor problems rather than because of their changing needs and profit structure resulting from their shift to foreign sources of fish and to fish stick production. Vessel owners and even some union leaders claimed that Boston's fishing industry declined because of the intransigence of the fishermen's union. The union membership would not allow changes in the lay arrangements to provide a larger return on investment to vessel owners. As a result, owners sold their boats or moved to other ports where the level of wages was lower. In Maine ports where the union was weaker and in Canada where the fishermen were not unionized, the owners could do better. The management of Gorton-Pew, later Gorton's of Gloucester, a vessel owner-dealer-processor which was the exception to the rule in Gloucester, told a similar story in 1956: "The crews in general on these Gloucester boats [Gorton-Pew's boats] are faring very well. It is the companies that are not faring very well. During a period of prosperity, the fishermen have the owner into a position that is completely untenable in view of present-day operating costs."[12]

On the other hand, most fishermen believed they were not well off. In the early 1950s when a crew share compared favorably with the incomes

of Boston manufacturing workers, fishermen pointed out that they earned less than a full crew share because they did not go on every trip a vessel made. They worked more hours and, they said, therefore earned less per hour than their annual salaries suggested. Even when many fishermen did earn more per hour than manufacturing workers, the hard, dangerous work on the north Atlantic made the earnings low in terms of effort. Through the 1950s and early 1960s, fishermen's earnings declined while other workers' incomes rose so that by the early 1960s fishermen on the large boats in Boston usually earned much less than the national median income. When they did earn an income of about the national median level, they worked many more days than other workers in New England and held a site on a boat that brought in a large gross stock.[13]

The story of the departure from Boston of General Seafoods, the Birds Eye Division of General Foods, illustrates the importance of a vessel owner-dealer's profit calculations, growth of imports, fish stick production, and labor disputes in Boston's problems. As World War II ended, General Seafoods was the largest boat owner-dealer in Boston. At the end of 1945 after the company had refitted ten boats reacquired from the Navy, its Boston fleet totalled eighteen vessels, fifteen company-owned and another three chartered, at least twice as many boats as any other vessel owner-dealer. All the boats were large offshore trawlers, displacing between 160 and 320 gross tons.[14]

By the late 1940s, however, General Seafoods felt the postwar slump in vessel profitability. In 1946 the new contract between fishermen and vessel owners in Boston, agreed upon after a six-month strike, gave fishermen a raise of about 25 percent at the expense of vessel owners through changes in the lay arrangements. General Seafoods appealed to the union to relax rules about the number of days boats could stay at sea. They could not make enough money without longer trips and would have to leave Boston if the rules were not changed, the management told the union. The threat caused tremendous debate in the union. The union head, Patrick McHugh, was "anti-capital," a group of younger fishermen claimed, and they campaigned against him to convince union members to grant General Seafoods's request. After long floor discussion the membership voted by a narrow margin to refuse to make the changes the company desired.[15]

Over the next few years General Seafoods sold or transferred its large boats which had employed around 300 fishermen. In 1949 the company sold boats to the Army for use in Germany. By the end of that year the company had reduced its fleet to five Boston trawlers and four trawlers operating out of a new Rockland, Maine, redfish plant. Over the next few years the company transferred more boats to Nova Scotia or to Rockland. The fishermen's strike in Boston in 1946 was part of the reason for the decision to contain the size of the fleet, management said, but certainly not the only one. The company had been able to protect itself during the strike by pushing production in

its Canadian plants to record highs; and it could move its boats to Canada or to Rockland to avoid the less favorable lay arrangements in Boston. Nevertheless, the management reported, trawler ownership just was not profitable.[16]

In 1953 General Foods developed the first fish sticks. The company produced fish sticks from domestically caught fish in Boston for a short time but found it less profitable than processing imported blocks and slabs from its plants in Canada. The following year the company moved all but management offices out of Boston. It sold three large Boston trawlers to another Boston firm and transferred the others to Rockland. The processing facilities, which originally filleted and froze Boston-caught fish, moved out of Boston to the company's plants in Gloucester and Rockland, and the company reacquired half a dozen vessels from the Army for operation from Rockland and from Halifax, Nova Scotia.[17]

James Ackert, one of the younger fishermen who wanted to go along with General Seafoods's request in the late 1940s, believes that if the union's vote had gone the other way, General Seafoods would not have left. He points to this as the major example of how the union caused Boston's decline.[18] It seems most likely, however, that General Seafoods might have stayed in Boston as long as it could press the union into making concessions, but when the union could give no more, the company would have moved its boats or sold them, like most of the other large vessel owning and fish stick producing companies.

Indeed, despite freedom from Boston labor problems, General Foods sold its fishing operations in Rockland and Nova Scotia to National Sea Products, the largest fish processing firm in Nova Scotia, in early 1957. "From a cost standpoint," General Foods reported, "Birds Eye has found it advantageous to purchase its requirements for fish and to limit its activities to processing and distribution." Even with the move from Boston, fishing did not bring in high enough profits. National Sea continued to operate General Seafoods's processing plants and boats in the ocean perch fishery from Rockland, Maine, through the subsidiary 40-Fathom Fisheries.[19]

The exception to generalizations about the reasons for the behavior of vessel owner-dealers were operations in the ocean perch fishery, as General Seafoods's decisions to build and expand its Rockland plant suggests. Only redfish could be processed from New England-caught fish as cheaply as from imported Canadian fillets, the president of Gorton-Pew reported in 1956. Large companies continued to own boats in the ocean perch fishery and to process the fish from the boats, but they moved their operations from Boston to Maine. In addition to General Seafoods, F. J. O'Hara and Sons moved a large share of operations from Boston to Rockland in 1939 to fish for ocean perch and process it. Both companies had transferred remaining Boston-based boats to Rockland by the 1960s. Boats faced a slightly shorter trip to the ocean perch fishing grounds from Rockland than from Boston, but, probably as important, the fishermen's union was weak, and the companies faced none of the disputes over

the lay agreement and the operation of the auction that they did in Boston. General Seafoods paid fishermen wages on the Rockland boats which removed fishermen's concern about fish prices, a move unprecedented in fisheries.[20] Labor problems may have been more important in explaining Boston's losses in the redfish fishery than in other sectors of the industry.

In Boston no evidence suggests that any of the fishery aid programs impinged on the decisions of the vessel owner-dealers whose behavior accounted for the largest part of the decline in Boston landings. Policy makers assumed a constituency of fishing interests that wanted to remain in fish harvesting or in processing of New England-caught fish and sought ways to do so. In Boston that group did a small volume of business compared to the total. None of the programs had been designed with understanding of the task of halting the decline in the number of boats and volume of landings in Boston, and the vessel owner-dealers' requirements for boat profitability were probably too high for programs to meet.

The forces that encouraged boats to leave Boston ran their course, but in the 1960s, the vessel construction subsidy program provided a few boats for a new organization of industry in Boston. By the 1970s nearly all Boston landings came from the subsidy boats and from Gloucester vessels whose captains felt they could get a better price for fish in Boston than in Gloucester. The port had become a center for fish wholesaling

rather than fishing. Boston's dealers handled fresh fish from all over New England supplemented with some Canadian frozen fish.[21]

No fishery programs aimed at solving labor problems either. Industry representatives almost never mentioned disputes in testimony before Congress. When they did so, they usually claimed that fishermen earned too much compared to boat owners; they did not detail problems. Calling attention to labor difficulties would have weakened the fishing industry's appeal for aid because Congress might have decided that the industry representatives should resolve their differences rather than receive aid from the federal government. Therefore, while programs aimed at solving overall problems of the industry, program directors could not hope to stop the emigration of some boat owners from Boston to ports with weak unions and low wages or to Canada or, therefore, to influence the symptoms of decline in Boston which the congressmen heard about.

Inadequate Understanding of Basic Industry Problems

Probably most fundamental in the failure of the fishery programs to solve the New England fishing industry's problems, however, was industry representatives' and policy makers' lack of understanding of the dimensions of the troubles that faced the region's groundfish industry. Even without many of the weaknesses discussed above, fishery programs would probably have had little success in turning the industry's fortunes

around. Industry representatives and government decisionmakers drew their prescriptions from incomplete analyses of the industry's difficulties, and they did not examine their program recommendations enough to understand whether these would solve the industry's difficulties or would run against new barriers in market characteristics, in fishermen's behavior, or in biology of the fish resources.

These lacks are understandable. Neither industry representatives nor government fishery officials had the resources of time or knowledge to develop fully an assessment of the problems. In addition, in the early 1950s, data and computer technology did not exist for industry or government spokesmen to do many kinds of important analyses of problems of the industry or of implications of proposed programs, had they been so inclined. Industry representatives and government officials did draw on the best, and for many years virtually the only, study of the New England offshore industry's dilemmas, Donald White's work, although they ignored many of White's solid policy recommendations.[22]

The shortcomings of efforts to solve the fishing industry's problems with inadequate understanding of the character of the industry's difficulties are evident in two major ways: in attempts to get tariff protection and in efforts to reduce domestic costs to foreign levels.

Results of a Tariff Increase

Industry representatives and congressmen alike believed that higher tariffs would have solved the offshore industry's problems.

If other difficulties remained, they felt, the industry would have been able to handle them under the protection of higher tariffs. "We believe very sincerely that the actual solution, the real solution, is the correction or restriction of the imports," Solomon Sandler of the Gloucester Fisheries Commission stated in 1956. Mayor Beatrice Corliss of Gloucester wrote, "A permanent solution, in our opinion, is the acceptance of the Tariff Commission recommendations." If the Tariff Commission recommendations had been accepted, a member of the House Committee on Merchant Marine and Fisheries asked Congressman William Bates of Gloucester in 1958, "would that have remedied the conditions?" "Yes, sir. I believe that perhaps it would have done so," Bates answered. "[The industry] is depressed because of a varied set of circumstances occasioned by action or inaction on the part of the Federal Government."[23]

1. A Tariff's Effect on Imports' Price

In 1956 the Tariff Commission recommended that the duties on groundfish fillets increase in order to remedy the "serious injury to the domestic industry." The Commission suggested that the duty on fish under the quota--the first fifteen million pounds of groundfish or 15 percent of average domestic consumption for the three preceding years, whichever was greater--be raised from 1 7/8 cents per pound to 2.8125 cents per pound. They recommended that the tariff on the remainder of groundfish imports increase from 2 1/2 cents per pound

to 3 3/4 cents per pound.[24] The long-term results of a higher tariff level cannot be certain because so many conditions facing the industry could have changed, but one can speculate about what might have happened soon after 1956 if the President had accepted the Commission's recommendations.

The new tariff levels would have increased the price of imported groundfish fillets, slabs, and blocks in the United States. Because the United States bought such a large share of world groundfish exports, about 45 percent of the total, the behavior of United States buyers could influence the price of groundfish. Therefore, the price of imports in the United States would not have gone up by the full amount of the tariff as the quantity of fish brought into the U. S. decreased. The next largest buyer of world groundfish products, the U. S. S. R., purchased only about 11 percent of world exports; Great Britain bought 8 percent; and a large number of other nations bought the remaining groundfish products exported by north Atlantic countries.[25]

How much the price of imported groundfish products increased and how much the quantity of groundfish imported decreased under the new tariffs would have depended on the character of processors and wholesalers' demand for imported fish and on the nature of the foreign dealers' and processors' willingness to supply fish to the United States. The more alternatives U. S. wholesalers and processors had to purchasing imported fish, the less the increase in price of imported fish and the greater the decrease in quantity imported as a result of higher tariffs.

Dealers and wholesalers could choose to purchase New England-caught fish or groundfish from Alaska. For fish stick processors, as explained below, these were not feasible alternatives in the mid-1950s. For wholesalers of frozen fish fillets, the other group of groundfish importers, the New England source offered a possibility.

Consumers' taste for fish sticks and for frozen fish fillets would have affected the price increase or quantity decrease as well. If large numbers of consumers chose to purchase much less fish sticks and frozen fillets with a small increase in price, the tariff would have had a smaller effect on the price of imported fish than if many consumers continued to buy fish sticks and frozen fillets as price rose. The more alternatives the consumers of the importers' product faced, the more likely that they would buy other products as price rose. Then the increase in the price of imported fish would be small compared to the size of the tariff and the reduction in quantity of imports would be large. Consumers did have many alternatives to fish sticks or frozen fish fillets, the importers' products. They could buy meat, poultry, or fresh fish, for instance.

Researchers have not investigated the nature of consumer demand for fish sticks or frozen fish fillets or the nature of importers' demand for groundfish so these issues cannot be discussed with certainty.[26] Importers' demand was probably rather price elastic because consumer demand was very elastic, but importers' demand would have been less elastic than that of consumers because importers had few alternatives

to purchase of foreign supplies of fish. Fish stick processors' demand for fish imports was probably less elastic than demand from wholesalers of frozen fish fillets because they had fewer alternative sources of fish than did the wholesalers.

Characteristics of supply, the elasticity and slope of the foreign exporters' supply of groundfish, also help to determine what the size of the price increase and the amount of the quantity decrease would have been as a result of higher tariffs. The fewer markets that the suppliers in the exporting countries had for their products, the more the price of the imported product would have gone up with the new tariffs and the less the quantity of imports to the United States would have declined. In 1956 Canadian producers, the source of 72 percent of all U.S. groundfish imports and 76 percent of the imports of blocks and slabs of groundfish, sent all their exports to the United States. In addition, many Canadian exporters were not free to establish new markets because they were subsidiaries of the large American fish stick-producing firms. The U.S. companies had established the Canadian firms to take advantage of cost differences between the U.S. and Canada in providing fillets or slabs and blocks of groundfish for fish sticks. Canadian plants that had processed fillets for their American parent companies added the capacity to produce blocks and slabs.[27]

The other major sources of groundfish for the United States producers, Iceland and Norway, had more diverse markets. In 1956 Iceland sent only 15 percent of its exports of groundfish blocks and slabs

to the United States, but 86 percent of its exports of frozen groundfish fillets went to the U. S. Nevertheless, Iceland had market ties with several European countries and American companies did not own its firms.[28] Norway exported almost no slabs and blocks of groundfish to the United States but sold 19 percent of its frozen groundfish fillets there. Norway sold fish to a larger number of European countries than did Iceland.[29]

The nature of the costs of production of the firms producing frozen fillets and slabs and blocks also would have influenced the amount that prices rose as a result of the tariff and the amount that the quantity of imports declined. The faster that costs rose as production increased, the more likely that the increase in tariffs would have had little effect on price, more effect on the quantity of fish imported, at least over a fairly short period. Research provides no answers about how costs changed with the level of firms' production. Over a few years, however, changes in capacity to adjust to the new price levels would make the supply more elastic than immediately after the tariff change so that eventually the effects of the new tariffs on price would have been smaller than they were at first.

As a result of all these factors, the foreigners' supply of blocks and slabs was probably quite inelastic in 1956, although less so over longer periods of time. The combination of a moderately elastic demand for blocks and slabs with an inelastic supply (see Table 4) probably would have meant that the price of blocks and slabs would have gone up only a

Table 4.

Summary of Factors
Contributing to Price Elasticity of Demand
and Supply of Imported Groundfish

Market Characteristic	Degree of Price Elasticity	
	Slabs and blocks	Frozen fillets
Importers' Demand:		
Almost no alternative sources	low	moderate
Elastic consumers' demand	high	high
Exporters' Supply:		
Few alternative markets	very low	low
Costs of production (short run)	low	low

Sources: see text.

small part of the tariff increase and the quantity of imports would have decreased by a large amount. The demand for frozen fillets of groundfish was probably more elastic than the demand for slabs and blocks, and supply was probably slightly more elastic than for blocks and slabs. All the same, the price of imported fillets probably would have risen only a small amount compared with the increase in the tariff as the quantity of fish imported declined.

2. Effects on Prices and Quantities of New England Landings

If these increases in price of imported groundfish and decreases in quantity imported had occurred with higher tariffs, the fishermen, boat owners, and fresh fish dealers of the New England offshore groundfish industry would have felt the effects through the fish stick market and through the market for frozen groundfish fillets. In fish stick production, companies relied entirely on foreign imports for their raw materials. As the cost of the fish blocks and slabs rose even slightly, they could have chosen to purchase New England-caught groundfish instead. However, the differences in price between the New England product and the foreign product were so great that U. S. processors probably would not have bought any New England groundfish.

In 1956 the markets for imported fish and domestically caught fish had not reached an equilibrium where product prices including transportation costs were virtually the same. Cod landed at Boston Fish Pier in 1956 averaged 7 cents per pound, or the equivalent of 18. 4 cents per

pound of filleted weight. Haddock earned Boston fishermen and boat owners 7.3 cents per pound, or about 18.3 cents per pound of filleted weight.[30] The value of imports of groundfish blocks was about 18.7 cents per pound in 1956 not counting freight charges, duties, and insurance; and transportation costs from Nova Scotia to the Gloucester fish stick plants were less than 1 1/2 cents per pound. In other words, fish stick ingredients landed at New England offshore ports cost about half a cent less per pound than the processed imported fish, about two cents less than the foreign price counting freight charges. With additions to the New England ex-vessel price to cover labor and capital costs and profit margins in filleting and freezing into blocks, the U.S. price for the processed product would have had to be much higher. The landings values for the Canadian fish which went into the groundfish blocks were a third to a half the ex-vessel prices in Boston. In Nova Scotia in 1956 haddock and cod brought the fishermen and boat owners 3.5 cents per pound. In Newfoundland cod averaged 2.3 cents per pound and haddock about 2.7 cents per pound in 1956.[31] Even if the tariffs had added the full cent or so of the increase in duty to the cost of the blocks and slabs, New England-caught fish would not have been inexpensive enough to serve as a substitute for imports.

In addition, the switch to New England-caught fish would have taken time and considerable investment; there was no possibility of smooth, marginal shifts to the domestic product. Since no New England processor made fish blocks in the United States, the beginning of production would

have involved the purchase of large amounts of capital equipment and the training of workers to do a new kind of job.[32] In the fish stick market, the tariff increase surely would not have encouraged fish stick processors' purchase of New England fish.

As the costs rose for raw materials, fish stick processors could have passed a share of the increase in costs on to consumers. As the price of fish sticks rose, consumers would have bought fewer fish sticks and more alternative products such as fresh fish, frozen fish fillets, meat, or poultry. If they bought more fresh fish or frozen groundfish fillets, then the New England offshore groundfish industry might have been better off. However, as the discussion below indicates, because both fresh and frozen fillets would have been more expensive also, consumers probably would have bought meat and poultry rather than other fish products.

By 1959 when the Customs Bureau ruled that fish blocks could enter the country at a much lower duty than frozen or fresh groundfish fillets, the effects of a 1956 tariff increase on the fish stick industry would have been erased. Then the price of fish sticks probably would have fallen compared to prices of domestically-caught groundfish and of frozen fillets imported under the higher tariff. As a result, the domestic industry would have lost a share of its market to fish sticks as consumers switched to the lower-priced product.

Almost no information about the demand for fish sticks or the cross-price elasticity of demand between fresh fish or frozen fish fillets

and fish sticks exists to suggest what the result of this tariff structure would have been. However, even without the price differentials caused by an increased tariff on groundfish fillets and a lowered tariff on blocks and slabs, the domestic industry was losing customers to the new product. By 1955 at least 55 percent of households in the Northeast--New England, New York, New Jersey, and Pennsylvania--were using fish sticks, a much larger percent of households than in any other region of the country.[33] In addition, a quarter of the households in the Northeast that used fish sticks said that fish sticks had replaced some or all of their purchases of other fish. Two-thirds of these households consumed less fresh fish. In the Northeast, this undoubtedly meant that they consumed less groundfish, the product of New England fleets, because the Northeast was the principal market for New England-caught fish. Ninety percent of these households bought less fresh and frozen fish.[34] A larger price difference due to tariff structure might have increased the shift to fish sticks.

The tariff increase would have affected New England fishermen and boat owners through the market for frozen fillets as well. The increase in the price of imported frozen fillets and the decrease in quantity of imports might have meant that wholesalers and retailers of frozen fish fillets would have purchased more of the domestic product at higher prices, as the proponents of tariff change had hoped. However, as with blocks and slabs, in 1956 American dealers were probably still increasing their purchases of foreign fish. They were not yet buying enough of the foreign product to make prices of the imported and domestic products

about equal. In 1956 the value of imported frozen cod fillets not counting duties, insurance, and transportation, was 18.6 cents per pound. The value of imported frozen fillets of haddock, hake, pollock, and cusk was 20.8 cents per pound. These prices were at most 2 1/2 cents per pound higher than the prices of unprocessed fish landed at Boston Fish Pier. Seen from another perspective, the landed price of cod in Nova Scotia plus transport costs plus the new tariff would have been at most 14.2 cents per pound of filleted fish if tariffs had increased price by the amount of the increase in duty. The landing price of cod in Boston, converted to filleted equivalent, was over four cents per pound more than the Canadian price. Since processing workers' wages were lower in Canada than in the United States, and filleting used the same technology in both countries, the difference in product costs was probably even larger. The cost of Nova Scotia haddock would have been about 13.9 cents per pound of filleted fish after transportation costs and tariffs were added to landings prices. In Boston the ex-vessel value of filleted haddock was nearly 4 1/2 cents per pound more.[35] Even with the higher tariffs, therefore, the domestic producers probably would have continued their shift from the domestic product to imported frozen fillets.

For redfish, in contrast, the new tariffs probably would have encouraged New England dealers to buy more of the domestic product because foreign and domestic prices were nearly the same. The cost of Nova Scotia redfish fillets, counting ex-vessel price, transport costs to Gloucester, and the full amount of the tariff, would have been at most

13.3 cents per pound in 1956. The ex-vessel price of redfish fillets in Gloucester was 13.5 cents per pound, virtually the same, although with differences in processing costs, Nova Scotia might have gained a larger advantage.[36] As dealers bought more New England-caught fish, the ex-vessel price would go up, as tariff advocates had envisioned.

Although dealers in cod and haddock fillets would not have bought more fish from New England fishermen rather than from import sources, the frozen fillets they bought would have been slightly more expensive. They and dealers in redfish fillets could have passed some of the increased price on to the consumer. As frozen fillets became more expensive, consumers who could choose to buy fresh fish might have done so. Their choice of fresh fish might have increased the price of fresh fish slightly and, therefore, the landings price for fish. However, the effects of the increase in duties recommended by the Tariff Commission on the prices fishermen received would have been very small, probably smaller than the Commission, industry spokesmen, or opponents of the tariff increase believed.

3. Effects on Revenues in the New England Groundfish Industry

The benefit or harm of the tariff increase for fishermen and boat owners depended not so much on changes in price as on changes in revenue. With the small price increase from tariffs recommended by the Tariff Commission or with larger price increases from even higher tariffs, fishermen and boat owners would probably have been worse off.

As ex-vessel price increased, dealers would have purchased so much less fish that revenue would have fallen substantially. For an increase in price of one percent, the quantity of fish which dealers purchased might have fallen by two or three percent or more.[37] As total revenue fell, fishermen and boat owners would earn less than with lower prices.

The demand from dealers for groundfish landed at the docks was elastic mainly because demand for the filleted product was elastic also. The wholesalers, institutions, and large retailers who bought from the primary dealers could purchase some fish from other parts of the country and imports of frozen fillets instead of New England-caught and processed fillets. However, demand for fish at the landings level derived ultimately from the consumers' demand for fresh fish and frozen fillets. Consumer demand for these kinds of fish was probably very elastic because other protein products offered alternatives to fish that suited their tastes as the price of fish rose.

Representatives of industry interests and the members of the Tariff Commission did not seem to realize that fishermen and boat owners might be worse off with tariffs than without. In the late 1940s offshore groundfish fishermen had tried to limit production through their union because they believed that if catch declined and price rose, they would have higher revenue. In other words, they believed that dealers' demand was inelastic. Boat owners told congressmen what prices they needed to break even and to make a profit without considering the quantity they could sell would decline. Even the representatives of

groups opposed to tariffs rarely suggested that higher tariffs could hurt the industry, although Donald White and the studies which depended on his work warned of the possibility.[38] Fortunately for the fishermen and boat owners, efforts to raise tariffs failed.

Results of Successfully Reducing Production Costs

In contrast to efforts to raise tariffs, the attempts to reduce the costs of fishing to foreign levels would have helped boat owners and fishermen at least for a while if the programs had been successful. From 1954 through the 1960s programs most likely to affect the industry directly, in contrast to research and development, emphasized reducing the costs of insurance and maintenance and repairs through safety information and the Fishery Loan Fund. If programs had succeeded in lowering these costs to the level of expenditures by Canadian boats of the same size, then, in general, offshore groundfish boats in New England would have made small profits instead of suffering losses.

1. Lowering Costs of Insurance, Maintenance, and Repair

In 1957 a small sample of Boston large trawlers over 200 gross tons paid an average of $1.45 per hundred pounds of fish landed for maintenance, repairs, and gear replacement. They paid an average of $.50 per hundred pounds for insurance. A group of Canadian boats of the same size paid an average of only $.66 per hundred pounds of fish for maintenance and repairs, $.13 for insurance. New England boats

of 150 to 199 gross tons spent from $.66 to $1.19 for maintenance and repairs, from $.29 to $.68 for insurance for every one hundred pounds of fish they landed. Comparable Canadian trawlers spent $.49 per hundred pounds for maintenance and repairs and $.09 for insurance (see Table 5).[39]

In 1957 at the Canadians' level of insurance and maintenance and repair costs, boats over 200 gross tons in the Boston groundfish industry might have earned an average of $20,500. Instead, they lost $9600. Offshore trawlers in Boston that displaced 150 to 199 gross tons might have made about $13,600 if insurance and maintenance and repair expenses had been comparable to Canadians'; they lost $8400. In Gloucester and Maine, the effects of the programs would have been smaller because costs were closer to the Canadian levels but still would have made the difference on average between boats' losing money and realizing small profits. Gloucester boats of 150 to 199 gross tons would have earned an average of $4200 with the cost reductions, but they lost $6600. Instead of losing $8600, Maine groundfish boats of 150 to 199 gross tons might have earned an average of $4500.[40]

In 1964 a group of Boston Large trawlers paid an average of $1.24 per hundred pounds of fish landed for repair and maintenance; they averaged $.61 for insurance per hundred pounds of fish. In the same year, the repair and maintenance costs for a group of groundfish trawlers in Nova Scotia whose construction had been subsidized by the government averaged $1.04 per hundred pounds of fish landed; insurance

Table 5.

New England and Canadian Expenditures for Insurance, Maintenance, Repairs, and Gear Replacement, 1957

Vessels	Average Lbs. Landed (millions)	Average Expenditures Per Hundred Lbs. Landed		# of Boats Sampled
		Insurance	Maintenance, Repair, Gear Replacement	
More than 200 gross tons:				
Boston	2.6	$.50	$1.45	5
Atlantic Provinces	5.5	.13	.66	5
150-199 gross tons:				
Boston	1.7	$.68	$1.19	6
Gloucester	2.8	.31	.66	5
Maine	2.5	.29	.82	5
Atlantic Provinces	4.7	.09	.49	unspecified

Source: Edward L. Lynch, Richard M. Doherty, and George P. Draheim, "The Groundfish Industries of New England and Canada," Circular 121, Fish and Wildlife Service, Department of the Interior, Washington, D.C., July 1961, Tables VI-7 and VI-7b, pp. 177 and 179, 70.

costs averaged $.22 per hundred pounds. If government efforts had reduced the Boston trawlers' costs to the level of the Canadian boats' costs, then Boston boats' profits would have increased from an average of about $4344 per year to about $19,240 per year before taxes.[41]

These were average figures. The programs would have had different effects on high- and low-income boats. Programs that successfully lowered costs would have benefited the low-income boats more than the more profitable ones and narrowed the differences in incomes of high and low earners. Therefore, unprofitable boats would have gained more than the most successful boats from reductions in insurance costs. In addition, low-income boats could have spent more for maintenance and repair so that they could increase fishing time and therefore earn a higher gross stock. Unprofitable boats had to increase their landings in order to stay in business even with programs which reduced costs. For example, if programs had brought insurance and maintenance and repair costs down to Canadian levels in 1957, the most successful Boston trawlers over 200 gross tons would have increased their profits from an average of $5600 to nearly $35,000. For the least successful boats with no increase in landings, the operating deficit would have decreased from more than $32,000 to about $5000. The least profitable boats made only 19 trips in 1957 compared to 29 trips by the more successful ones.[42] If the unsuccessful boats increased their fishing time as a result of the programs, they probably could have made a profit

even though other costs would have gone up at the same time and prices would be lower.

As landings increased with more fishing by lower income boats, the differences among boats' incomes would have decreased further. The most successful boats already operated at capacity. They made as many trips as possible during a year under union rules about the number of days a boat could stay at sea and had to lay over between trips. As less profitable boats continued to fish instead of going out of business, made more trips, and had fewer "brokers"--trips that ended early because of mechanical problems and, therefore, brought in few fish--total landings would have increased or would have decreased more slowly. The price of fish would have declined if all other conditions remained the same. Then the boats that had been most profitable would have earned a lower gross stock because they received a lower price for the same amount of fish, although the revenues of the entire fleet would have been higher.

Programs that narrowed the differences in income between high-liners and the unsuccessful boats rather than increased the incomes of all, probably would have been unpopular among the successful captains. While no one objected to programs that gave a special advantage to oneself, most disliked inequitable aid programs in principle and especially protested such programs when they helped groups worse off than themselves. Boat owners complained that the construction subsidy of the 1960s gave unfair advantage to some owners over others. Regulations of the mid to

late 1970s reduced the potential for captains to excel compared to others. Captains complained that programs or government regulations that made it possible for any boat to do as well as another took the enjoyment and the motivation for hard work out of fishing.[43] It seems unlikely that a program which successfully reduced costs of insurance, repair, and maintenance to the level of foreign costs could have continued for long without objections from many fishermen and boat owners.

The level of profits under the cost reduction programs probably provided a reasonable rate of return on investment. If a boat of 150 to 199 gross tons had originally cost $150,000[44] including equipment and the owner had not received any financing, then profits of between $4200 and $13,600 in 1957 would have meant a return on investment of 3 to 9 percent. The prime interest rate, which banks charged their best customers for short-term loans, in 1957 was about 3.8 percent. The long-term yield on high-grade corporate bonds was about the same. The yield on industrial common stock was about 4.1 percent.[45] Even though fishing boat investments were riskier than any of these, profits probably offered an attractive rate of return. In addition, owners with financing which reduced the equity they had in their boats would have received a higher rate of return on their investment.

In Gloucester where Italian families from a fishing tradition owned many boats, the rate of return would more certainly have been satisfactory. If a family made any profits, they could keep their boat going; they were not considering more attractive investments.[46]

The new level of profits might have made it possible for owners to purchase new boats eventually. Even though a new boat would have been much more expensive, at least $200,000 by the late 1950s and most likely much more, the greater sale value of the old boat because of its improved earning power combined with the expectation of a reasonable income from a new boat might have made new construction possible by the 1960s at least for those who particularly wanted to stay in fishing. On the other hand, undertainty about whether the government would continue to keep the costs of fishing low might have made the new investment less attractive and might have discouraged any lenders outside fishing from making loans.

In sum, if programs to reduce insurance and maintenance and repair costs to foreign levels had succeeded in doing so, the efforts would have had a favorable effect on the offshore groundfish industry for a short period, at least. The programs would have helped more boats to realize profits although the efforts would have narrowed the differences in incomes among boat owners. The profits might have made new boat investment possible if the programs were stable for quite a few years. New construction to replace old boats would have been necessary to sustain the fleet for a long time. However, if the cost reduction attracted new participants into the groundfish industry, individual boat profits would have gone down, and the fish stock might have been depleted, as the discussion below indicates.

2. Lowering Vessel Construction Costs

From 1960 through the late 1960s, the major efforts to reduce costs aimed at vessel construction expenses through the subsidy programs.[47] Vessel owners who took advantage of the subsidies profited, but if all offshore groundfish boats had been replaced, as the program originally intended, the results for owners would probably not have been so favorable.

Boats produced under the subsidy programs made money, probably more than most other boats. Owners who drew on subsidies returned to apply for funds to build more boats. The group of fishing interests which Thomas Fulham led built two boats under the first subsidy program, and another group that included Fulham and others constructed two more boats with funding from the second subsidy program. O'Hara and Sons of Rockland, Maine, built two boats under the first program, three under the second. The Brancaleones, a Gloucester family, built one boat under each subsidy program.[48] "The fishboat subsidy has been a great help to our company," one boat owner reported. "Many of the highline New England vessels have been built under the program, and while the red tape has been a bit rough, it's been worth it." "The fishing industry had a good thing (in the subsidy)," according to Frank O'Hara of O'Hara and Sons.[49]

In 1966 the three Boston boats constructed with funds from the first program performed very well compared with similar older boats. Of sixteen Boston boats of about the same size, only two made more trips

and brought in more fish than the subsidy vessels. Only one of those boats generally had larger loads of fish per trip.[50] All three subsidy boats were certainly among the five highest earners of boats their size in Boston, and while owners usually argue that boats of the same size have the same costs, the new boats probably had lower costs than the two boats which brought in more fish. Both of those boats were thirty years old and probably had higher repair and insurance costs because those expenses usually rose with the age of the boat.[51]

Compared with boats of about the same size that harvested less fish, the subsidy boats probably had the additional advantage that they attracted better captains and crew because fishermen knew they could make a better living on the new boats, the boats were safer, and living quarters were usually more comfortable. Newer equipment on subsidy boats probably helped subsidy boats to harvest more fish with the same amount of effort as many of the older boats, although vessels used the same technology.[52]

Although the subsidy programs undoubtedly benefited those few who took advantage of them, if many more offshore groundfish boats fishing in 1959 had been replaced with new boats similar in size to the three new Boston boats, then the results for all owners might not have been as favorable. In 1959 about eighty large boats, over 125 gross tons, and about ninety-five medium-sized boats, 60 to 125 gross tons, fished offshore out of New England ports for groundfish.[53] If many more of these had been replaced by the late 1960s with new boats similar to the ones

constructed for Boston, then the volume of landings would have gone up for a few years as the new boats came into the fleet. Prices for groundfish would have fallen, and revenues would have been higher for the fleet as a whole. For the older boats that remained, however, incomes would have been lower unless they could have brought in more fish to compensate for the lower price. New boats would have benefited most from the higher fleet revenue, and their incomes would have been satisfactory.

However, as new boats entered the industry, profits would eventually have declined, in part because the new entrants' landings would drive prices down and in part because the added effort would increase fishing costs. The additional fishing pressures on the fish stock would have increased landings for a while. Biologists now believe that the production from the stocks of cod and haddock was around the highest possible sustainable yield in the 1950s for the grounds which New England boats fished most commonly. New England vessels harvested the bulk of that catch.[54] With additional larger, more efficient boats, landings from the banks would have gone up for a while above the higher sustainable yield and then fallen to a lower sustainable yield from a depleted stock. As costs of fishing rose because of depletion, replacement of more older boats might have become unprofitable even with the subsidy. On the other hand, because profits would not have been distributed equally among the boats in the fleet, new boats might have

continued to make some profits while the older boats' financial position worsened. Then incentives would have remained to replace old boats with new until the new boats' profits fell more.

This scenario could not have been played out, however. In the mid-1960s foreign fleets began to fish heavily on Georges Bank for groundfish species, especially haddock. In 1964 all nations harvested 64,000 metric tons of haddock from Georges Bank. In 1965 the amount more than doubled to 149,600 metric tons. United States vessels had harvested 73 percent of the Georges Bank haddock landings in 1964, but in 1965 they brought in only 35 percent of the total. By 1969 Georges Bank haddock production had fallen to 22,000 metric tons. Landings per day fished, an indication of the condition of the haddock stock, fell from 5.6 metric tons in 1965 to 2.8 metric tons in 1969.[55] In other words, boats brought in half as much fish for the same amount of time on the grounds.

As haddock became badly depleted, groundfish boats turned more effort towards cod. Total landings of cod had fluctuated between 11,000 metric tons and 39,700 metric tons but rose to 57,300 metric tons in 1966 with large catches by foreign boats. Landings declined considerably after that.[56]

Redfish had shown symptoms of depletion even without much foreign boat activity. The catch per unit of effort spent in fishing declined from

1950 through the late 1960s in the fishing areas closest to the United States, and boats traveled farther, to banks off Nova Scotia and Newfoundland, to find better stocks.[57]

New larger subsidy boats which could harvest more fish for the New England industry would have speeded the depletion. All boats would have harvested fewer fish, price would have gone up, and total revenue for the fleet would have fallen. Higher prices could have increased the imports of groundfish and held prices down, although the major source of imported groundfish, Canadian fishermen, worked on some of the same grounds and on other banks also depleted. With prices held down, however, boats would have been worse off because they would have received about the same price for less fish. Once again, large numbers of boats would have been unprofitable.

In sum, the fisheries efforts of the 1950s and 1960s did not succeed in achieving their immediate ends, raising tariffs or reducing the costs of fishing, for example, for a variety of reasons. However, even if the programs had done so, they could not have succeeded in solving the problems of the New England offshore groundfish industry because the efforts were based on inadequate assessments of the industry's problems and of the changes the programs would bring about if they were properly implemented.

By the late 1960s, however, few people seemed to pay much attention to the fact that the programs had not done their job, and few considered whether the programs had been properly conceived. New

perceptions of the problems of the groundfish industry and of ways to deal with them evolved as the foreign fleets fished heavily on the offshore banks. Attention turned to those problems and to new efforts to solve industry difficulties.

APPENDIX

STUDIES OF THE DEMAND FOR GROUNDFISH AND THE EFFECTS OF IMPORTS ON EX-VESSEL PRICES

Studies of the demand for and supply of groundfish can help in understanding the effects of import restrictions on the New England offshore groundfish industry. Such studies can analyze the determinants of the "ex-vessel" price of groundfish, the price fishermen receive for landings, with attention to factors such as the quantity of fresh fish landed, the price of meat and poultry, consumers' income, population change, quantity of imported groundfish or the price of fish sticks, abundance of the fish resource, and the effort fishermen spend in harvesting fish. Fishing effort is related to technology, weather, the number of boats in the industry, union regulations, captains' assessments of prices, and other conditions. Many researchers have analyzed the demand for groundfish during the 1950s and 1960s. For several reasons, however, the findings of those studies do not provide thorough understanding of the effects which import restrictions might have on the groundfish market and on the incomes of fishermen, boat owners, and dealers in New England. This appendix outlines the major problems with most research and presents the most useful findings on the effects of import restrictions.

All studies of ex-vessel demand for groundfish make single-equation estimates and, therefore, proceed as if the supply of groundfish shifts

much more than demand, the shifts in the supply curve are not correlated with shifts in the demand curve, and supply is perfectly inelastic in the short run. The majority of studies do not make these assumptions explicit, but the methods require these conditions to produce the least biased estimates of the slope of the demand curve. With these assumptions, one can estimate a demand function in a single equation without serious identification problems.[58] In some studies of the demand for groundfish the equations are consistent with these conditions, and the results are useful; in others, equations do not satisfy the conditions. Consideration of the character of the fishing industry shows why some approaches fulfill the assumptions necessary for single-equation estimates better than others.

Research that uses monthly data can assume that supply shifts much more than demand with greater confidence than research that uses annual data. When the demand equation includes variables which account for large shifts in demand (for example, per capita income, population size, a price index for meat and poultry, the Lenten season), shifts in the demand equation are reduced so that it is possible that only small random shifts remain. In contrast, from month to month, the supply curve shifts considerably with factors that influence the amount of time fishermen can spend fishing (weather, fishermen's strikes, and boat repair problems, for example) and with the availability of the fish resource (migration of fish or restrictions on gear and fishing areas imposed by fishery regulation, for instance). None of these factors

influence shifts in demand, and factors that shift the demand curve probably have little to do with supply curve shifts.

From year to year, the assumptions that supply shifts more than demand and that the shifts of supply and demand are uncorrelated are not well satisfied. Shifts in the supply curve are much smaller so that the observations of price and quantity, the intersection of the demand and supply curves at different times, are much less dispersed, and difficulties in identifying the demand curve are greater. With less variability in the supply curve, the estimates of the slope of the demand curve are probably biased upward so that estimates of elasticity of demand are low. The dominant shifts in supply from year to year are also more likely to be those correlated with demand shifts. For example, as per capita income, a demand shifter, rose faster than fishermen's income in the 1950s and 1960s, departure of fishermen from the industry or lack of new recruits for fishing might have influenced shifts in the supply of groundfish over the period of a year.

Whatever the size of the random shifts of the supply and demand curves, bias in the estimates of the slope of the demand curve is smaller if the supply curve is very inelastic. Again, research that uses monthly data can assume an inelastic supply curve at the ex-vessel market level with more assurance than research that uses annual data. Offshore fishermen probably do not respond to price within a month. They have little choice of fishery because gear changes are time-consuming and very expensive. Captains can learn about market conditions by

radio while they are at sea, but even if the price of one specie of groundfish is higher than another, a captain cannot necessarily catch more of that specie than others because the fish have similar habits and live in the same areas. In 1947 the Massachusetts Superior Court ruled illegal the cooperation among fishermen through their union to limit catches, and such efforts are very short-lived and ineffective when they occur. Inshore fishermen, on the other hand, change gear in response to prices in a very short time. Under cooperative selling arrangements dealers advise fishermen by radio about the prices they are likely to receive and recommend what species to bring in during each day's trip.[59] Offshore fishermen dominate the groundfish market, however. In 1955 and 1960 fishermen in offshore ports, excluding Rockland and Portland, landed between 65 and 85 percent of the cod and haddock which New England fishermen harvested. In 1965, a year for which the catches of inshore and offshore fishermen can be distinguished within ports, offshore fishermen brought in about 75 percent of the cod, 93 percent of the haddock, and 98 percent of the redfish landed in New England.[60] Therefore, the supply curve for the groundfish landings market probably reflected the behavior of offshore fishermen during the 1950s and 1960s and was quite inelastic in a month.

Many demand studies use annual data, however. During a year offshore fishermen and boat owners can respond to the prices of groundfish. They may sell their boats or transfer them to other fisheries or to ports outside the region, and they can purchase new boats and equipment

which improve their efficiency in catching fish and, therefore, increase fishing effort.

Because the supply of groundfish does not shift much more than demand and because supply is not inelastic, researchers who work with annual data should estimate supply and demand simultaneously and should attempt to determine the extent of correlation between shifts of supply and demand. Such work involves complex econometrics. Bioeconomic theory suggests that the equilibrium industry supply curve bends backward as the resource becomes depleted with higher prices. The way in which the supply curve bends backwards depends on the biological characteristics of the fish resource and on fishing effort.[61] Few researchers have attempted to estimate a fishery supply curve empirically. Those who have done so make simplifying assumptions about demand.[62] While they contribute to understanding of the supply side of the industry, this work has not yet added to knowledge about demand.

These considerations suggest that efforts to estimate demand which do not use monthly data or data for even shorter periods of time have too many statistical problems for their findings to be useful in understanding the effects of imports on the price of groundfish. Equations that use monthly data but do not include variables which control for shifts in the demand curve do not produce useful estimates of the determinants of price either.

Arguments for single-equation estimates of the demand for fish at market levels other than ex-vessel are much weaker even with monthly

data. Supply need not shift more than demand. Retailers and wholesalers probably can respond to price changes in a month by purchasing different amounts from dealers and by freezing and holding some of their stock, for example.

Many studies of the demand for fish at the ex-vessel level suffer from the problems discussed above, and a share of the few studies of demand at other market levels make single-equation estimates.[63] Other studies, very few compared to the total number of studies done, which handle the identification problems more satisfactorily provide some understanding of the demand for groundfish.[64]

Table 6 shows the results of the strongest study of the demand for fish, work by Frederick Bell. Most important for understanding the results of the higher tariffs, the equations show that the demand for these species of fish is very elastic. Estimates of the price elasticity of demand for the different species range from -2.17 to -3.30 even when the prices of similar species are taken into account. Therefore, as tariffs raised prices, quantity of fish purchased would decrease more than proportionately, revenue would decline, and fishermen and owners would be worse off.

The coefficient which shows the effects of changes in imports of groundfish on ex-vessel prices is ambiguous and does not help in understanding the effects of tariff increases. The coefficients are usually not significantly different from zero. Bell offers two possible explanations for the failure of the imports variable to explain variation in landings

Table 6.

Results of Logarithmic Single-Equation Estimates of Ex-Vessel Demand for Groundfish
January 1957-August 1967
(Landing price is dependent variable)

Specie	Constant	Q	Y	S	I	C	L	Z	P-B	N	$\bar{R}^2$	D-W
Large haddock	-.237 (-.135)	-.460 (-12.431)	.212 (.816)	-.019 (-.513)	-.001 (-.366)	.878 (3.554)	.010 (.721)	.388 (9.314)	-.108 (-4.650)	123	.853	.781
Small haddock	-1.748 (-1.517)	-.456 (-12.861)	-.152 (-.542)	.057 (1.845)	.042 (1.047)	2.231 (8.569)	.039 (2.412)	.202 (3.745)	-.009 (-.367)	123	.802	.660
Cod	-2.552 (-2.896)	-.317 (-8.859)	.031 (.155)	.117 (4.232)	.028 (.714)	1.784 (7.081)	.031 (2.060)	.307 (6.477)	-.047 (-2.003)	123	.780	.978
Ocean Perch	.383 (.509)	.004 (.182)	.003 (.018)	-.012 (-.605)	.063 (2.465)	-.076 (-.392)	.013 (1.250)	.176 (3.666)	-.045 (-2.630)	123	.309	.513

Q = quantity of species landed in New England (thousands of pounds);
Y = aggregate personal income in 1957-59 dollars for Northeastern U.S. (tenths of millions);
S = cold storage holdings of species at beginning of month in New England (thousands of pounds);
I = imports of the species into New England (thousands of pounds);
C = consumer price index for meat and poultry: 1957-59=100;
L = Lenten demand: 1 for non-Lent months, 10 for Lenten months;
Z = weighted ex-vessel price for competing New England fish products landed (cents per pound);
P-B = Papal decree that Catholics need not abstain from eating meat on Fridays, 1 for all months prior to decree, 10 for all months in which decree is in effect;
and price (dependent variable) is ex-vessel landing price of species in New England (cents per pound).
t-values in parentheses.

Source: Frederick W. Bell, "The Pope and the Price of Fish," American Economic Review, 58:5, pt. 1 (Dec. 1968), pp. 1346-1350.

prices. First, higher prices at the landings level may attract more imports into the country, but at the same time, a higher volume of imports holds the price of domestic landings down. Second, imports enter the frozen fish market while a large share of the domestic landings go into the fresh fish market; one market might not be very sensitive to prices in the other.[65]

The best study of the demand for groundfish in a market above the ex-vessel level estimates demand and supply simultaneously with limited information maximum likelihood techniques. It shows, however, that as price rises, the quantity of fish purchased increases also. Therefore, the equations probably do not succeed in identifying the supply and demand equations separately.[66]

CHAPTER 5

FOREIGN FLEETS AND QUESTIONS OF FISHERIES CONTROL

In 1960 New England fishermen sighted trawlers from the Soviet Union on the offshore grounds for the first time. The boats attracted only passing interest from fishermen, perhaps because they stayed about 160 miles offshore and fishermen rarely saw them engaged in trawling. Defense Department officials, in contrast, expressed considerable concern, for they suspected that the trawlers doubled as spy ships. A Russian trawler, unusually clean for a fishing vessel and with no fishing gear in sight, according to Navy observers, viewed the maneuvers of a Polaris submarine off Long Island. A soviet defector told Congress that intelligence units commanded the Russian trawlers off the New England coast. Representative John W. McCormack of Massachusetts declared that well over 200 vessels equipped with a "forest of radar nests and electronic gear" were massing in the Atlantic to spy on U. S. fleet maneuvers.[1]

In 1961 when Russian vessels returned to Georges Bank and fished more heavily, New England fishermen reacted much more strongly. The fishing activity constituted a "Russian invasion" and "a second 'Berlin Situation.'" Russians used illegal small-mesh trawl nets, the fishermen charged. American boats had to leave the areas the Russians fished in order to avoid being run down by the large Russian vessels, offshore

fishermen from Boston, Gloucester, and New Bedford complained. "We're thinking of asking the Coast Guard to give us protection," a fisherman on one of the largest Boston groundfish trawlers said. Russians violated international regulations by "charging around at night without running lights," fishermen complained. In their "deepest penetration" of coastal waters, the Russians sent sixty vessels to the fringe of Nantucket Shoals where inshore draggers commonly fished. Moreover, fishing violations and interference were not the Russians' only sins, the fishermen suggested, in support of Department of Defense allegations. Vessels that showed little sign of fishing activity, they said, but carried sophisticated electronic gear came within a few miles of the New England coast, and their aims were not benign.[2]

New Conditions: The Growth of Foreign Fleets

In 1961 at most 100 foreign vessels, nearly all from the Soviet Union, fished on Georges Bank. They were only an indication of what New England fishermen could expect in the next few years. In August 1963 nearly 300 Soviet vessels, more than the entire New England offshore fleet, fished on Georges Bank and other New England grounds, many within four miles of Cape Cod. By 1964 five nations besides the United States and Canada caught significant amounts of fish off New England: Great Britain, the USSR, Poland, Norway, and Spain. The number of soviet vessels on New England grounds at the peak of the season decreased,

but the boats were larger than ever before, and they still greatly outnumbered those of every other foreign fishing nation working in the region. One New England congressman reported on his view of the Russian fleet: "I got on a plane and flew out beyond Nantucket and saw for myself one of these fleets at work. It was an awesome sight. It stretched from one horizon to the other and I lost count when I got to 75 vessels." According to a Gloucester offshore fisherman, "Some days it's like New York City out there." "If you were to be present on this scene at nighttime, it would look to you just the same as a large city with thousands and thousands of lights as far as one can see over the horizon," reported Leonard Roche, president of Boat Owners United in New Bedford.[3]

The size and technology of the foreign vessels fishing the traditional New England grounds were just as impressive as their numbers. The Russian fleet, Congressman Hastings Keith of Massachusetts said, "looked like a navy task force, or perhaps like the great echelons of self-propelled combines we see pictured in Kansas wheatfields." According to John Cronan, chief of the Division of Fish and Wildlife in the Rhode Island Department of Natural Resources, the foreign fleet was "Ford, General Motors, and all the rest at sea, rather than in Michigan." The Russians were "sweeping Georges Bank with all the thoroughness of a naval mine sweeping operation," according to one reporter.[4]

Some of the foreign vessels used methods familiar to New England, side trawling and gillnetting, but the boats were much larger than American ones. They usually displaced from 500 to 2500 gross tons, ten times the

displacement of New England side trawlers and many more times that of the inshore gillnetters. More commonly, however, by the mid-1960s the foreign vessels used newer technology, stern trawling, and could adjust their gear to fish at different depths in order to direct effort towards a variety of fish stocks, something no New England vessel could do. These vessels were larger than the foreign side trawlers that had preceded them. Many stern trawlers immediately processed the fish they caught. A variety of big support ships accompanied the trawlers on the grounds. In their most sophisticated use for the soviet fleets, these ships could process fish, take on processed fish for transport to home ports, provide fuel and other supplies to the boats, repair equipment, and provide medical and recreational services for crews.[5]

Foreign fishing strategies differed considerably from those of the New England industry. The fleets stayed at sea for months. The fleets in the north Atlantic fished the banks off Norway, Greenland, Iceland, and Canada as well as Georges Bank and areas off the coast of the mid-Atlantic states. Fishing techniques differed somewhat among countries, but usually groups of vessels fished together. Soviet vessels coordinated their trawling to cover an area of ocean bottom and moved to new grounds at the decision of a chief on one of the vessels in a group. They practiced pulse fishing, working intensively on one stock of fish until it was too exhausted to make further fishing worthwhile.[6]

According to fishermen and their representatives, these techniques were remarkably effective. After the Russian fleets passed, one captain

reported, fishermen found the "bottom clean as a whistle." The foreigners "vacuumed" the grounds, a fisherman's wife said.[7]

The foreign fleets soon harvested a large share of the catch from the New England fishing banks (see Table 7). In 1960 before the foreign boats arrived, the United States fishermen landed almost 90 percent of the fish harvested from Georges Bank, all the fish caught off southern New England, and more than 96 percent of the catch from the Gulf of Maine. Most of the remainder of the harvest from Georges Bank and from the Gulf of Maine went to Canadian fishermen. In 1965, however, the American fishermen caught only 35 percent of the harvest from these areas, and Canadians caught only another 7 1/2 percent. The Soviet Union took 56 percent of the total harvest off New England that year. On Georges Bank, the American fishermen brought in only 38 percent of the total catch. By 1972 they caught only a little over 10 percent of the harvest from Georges Bank and about 12 percent of that from southern New England. Only in the Gulf of Maine did New England boats continue to dominate fishing activity; there they harvested about 77 percent of the total.[8]

At first the foreign fleets, dominated by the Soviet Union, directed their fishing efforts towards species that the New England fishermen had never harvested in large quantities. In the early 1960s they fished for adult herring and whiting on Georges Bank, the Russians reported to the International Commission for the Northwest Atlantic Fisheries (ICNAF). Then they harvested red hake, used for industrial purposes in the U. S.

Table 7.

Metric Tons of Fish Landed by Countries Fishing Georges Bank and the Gulf of Maine (ICNAF Sub-area 5), 1961-1976

Year	United States	Canada	USSR	Other Countries	Total
1961	381,291	39,206	68,521	140	489,158
1962	427,769	54,975	209,370	535	692,649
1963	412,555	70,206	230,832	-	713,593
1964	342,520	75,178	335,930	2,094	755,722
1965	313,494	68,046	500,686	4,612	886,838
1966	294,326	84,496	456,358	25,745	860,925
1967	273,980	80,619	267,924	87,592	710,115
1968	280,991	99,674	281,954	172,375	834,994
1969	262,570	60,493	380,196	160,403	863,662
1970	257,680	47,353	166,201	215,787	687,021
1971	246,107	69,789	292,754	211,798	820,448
1972	201,157	52,141	407,352	277,880	938,530
1973	226,022	52,097	390,180	394,497	1,062,796
1974	238,269	62,060	299,078	207,007	806,414
1975	253,688	75,786	268,087	193,833	791,394
1976	290,221	88,209	159,781	107,298	645,509

Source: Leah J. Smith and Susan B. Peterson, "The New England Fishing Industry: A Basis for Management," Technical Report 77-57, Woods Hole Oceanographic Institution, August 1977, Table I.4 from ICNAF Statistical Bulletin.

In 1965, however, when the strong 1963 year class of haddock was recruited to the fishery, the Soviet vessels turned their attention to that stock, the most valuable to New England fishermen. The foreign catch of Georges Bank haddock more than quintupled as it jumped from 17,600 metric tons in 1964 to 96,800 metric tons in 1965 while the U.S. catch rose only slightly from 46,500 metric tons to 52,800 metric tons. The Soviet Union announced that its catch in 1969 of another specie especially important to New England fisheries, yellowtail flounder, equaled two-thirds of the U.S. harvest.[9]

The fish stocks could not stand these pressures for long without problems. Whiting fleets off southern New England had trouble finding commercial quantities of the fish, and fishermen who caught red hake for industrial production noted low abundance on their traditional grounds. The worst fears centered on the haddock and yellowtail flounder resources, however. Bureau of Commercial Fisheries biologists warned that no strong new year classes would follow the 1963 cohort of haddock that were so heavily exploited. By 1970 haddock stocks were so low that fishermen, biologists, and government officials talked about a haddock "crisis."[10]

New Perceptions of Reasons for Groundfish Industry Problems

The Industry's Assessment

As the foreign fleets increased their fishing pressure on New England's traditional grounds, the perception by New England fishermen, processors, and boat owners in the groundfish industry about the causes of their problems slowly changed. In the early to mid-1960s they continued to complain that the foreign fleets interfered in fishing operations in outrageous ways. For example, James Ackert, president of the Atlantic Fishermen's Union, reported that Russian patrol ships "come up right alongside of you and put the spotlight on you and just keep nudging you off" the fishing grounds. Fishermen repeatedly alleged that the fleets used gear which was illegal under international regulations. Furthermore, the foreign vessels offered unfair competition. Seventy-five percent of the boats in Gloucester were over twenty years old, run-down, and outmoded, according to Manuel Lewis of the Gloucester Fisheries Commission. "Can we expect this type of vessel to compete with the modern Soviet and Japanese fishing vessel? I am sure that every member of this committee has heard of the great invasion of the Soviet fishing fleet. . . . A fleet that subjects one's own to humiliation by their size and age and equipment of the most modern types."[11]

While the latter complaints were new, none constituted a redefinition of the causes of the New England groundfish industry's problems. Instead, the comments reflected the fishermen's competitiveness, a basic

reason that many of them worked as fishermen. Ambition to be a "highliner" drove captains, especially the best ones, to perfect their ability to catch fish; it motivated many crew to improve their skills, to seek sites on the best boats, and to aim to become captains eventually. Highliners earned the highest incomes in a port. Highliner ambitions were rarely separable from the "big bag mentality."[12] Even if prices were low, captains' statures were enhanced if they located large quantities of fish and brought in the largest loads; they wanted the satisfaction of catching more than others did. Furthermore, they enjoyed seeing a full bag come over the side and keeping their crews busy.[13]

Until the early 1960s, they had only had each other and Canadians with whom to compare themselves. The Canadian boats were similar to their own. In the early 1960s, however, they watched the Russian boats hauling in enormous quantities of fish. The New England fishermen had no hope of doing so well with their own boats. The larger boats' bullying tactics only increased their frustration and contributed to their fury. They carried to the State Department and the International Commission for the Northwest Atlantic Fisheries their suspicions that the Russian boats were not operating under gear constraints which limited their own fish-catching ability, but the accusations were never proved. The small-mesh nets New England fishermen found on the banks and labeled otter trawl nets were probably drift nets and gillnets for which there were no mesh size regulations, officials said, although fishermen said they found such nets laced into otter trawls.[14] Fishermen probably felt the

competition even more keenly because the foreign boats and fishermen were Russian, the Cold War enemies who were blockading Berlin, setting up missile bases in Cuba, and competing with the U.S. in outer space exploration and in arms development.

Along with their other arguments, representatives of the groundfish industry did warn that the Russians were depleting the fish stocks. These points were clearly not the important ones yet, however, as the spokesmen urged Congress to pass vessel subsidy legislation which might allow the New England fishermen to take larger amounts of fish from the same grounds. Indeed, in 1966 when some New England groups first called for a 200-mile zone for U.S. fisheries jurisdiction in order to restrict foreign fishing activity and prevent even more severe depletion, no groundfish industry voices spoke up. Not a single representative of fishing interests in Gloucester, Boston, or Maine lobbied for the move.[15]

From the mid to late 1960s, however, a new definition of the causes of the groundfish industry's problems did evolve. As early as 1964 James Ackert told congressmen, "Because the Russians have refused to abide by established conservation practices, we must assume that by the practice of using small mesh twine, they will deplete our fishing grounds. . . . The lack of production on Georges Bank and other banks off our New England shores are of great concern to the people engaged in the New England fishing industry." His comments were unusual, however, until fishermen began to feel the depletion of the fish stocks. Those who earned their incomes from catching hakes became concerned first.

In 1966 Jake Dykstra, president of the Point Judith Fishermen's Cooperative Association, warned that foreign vessels "have been observed taking huge catches of fish continuously over long periods of time, thereby subjecting the stock of fish to far greater pressure than United States vessels do. . . . Massive fleets of huge ships . . . have the capacity to cause irreparable damage to fishery stocks almost overnight."[16]

Not until 1969 or 1970 had groundfish fishermen, boat owners, and processors clearly redefined the causes of their problems, however. In 1969 the landings of haddock declined to only 38 million pounds, just two-thirds that of the previous year's catch, the lightest harvest any in the fishing industry could remember. Foreign fleets' increased fishing effort and the failure of all year classes after 1963 caused the depletion, they said. By the early 1970s, their explanation for their problems was clear: the foreign fleets were depleting the fishing grounds on which they depended. The old diagnosis was certainly not entirely forgotten. Fishing spokesmen usually listed a few causes for their difficulties. Rising costs and imports worried them, they said, but none posed the threat that the foreign fleets did. Salvatore Favazza, executive secretary of the Gloucester Fisheries Commission, explained that the New England fisheries suffered from two basic problems, foreign competition in the marketplace and foreign competition for the resources on the fishing grounds. Before 1960, he said, market competition had been most important, but after that, competition for the fish became most critical "with the foreign fleets raping our resource."[17]

Congressional Diagnoses of the Problems

Members of the House of Representatives from the New England fishing districts and elected state officials presented a more black and white assessment of causes of problems by the early 1970s. According to Lt. Governor Donald Dwight of Massachusetts, "The decline of the Massachusetts fishing industry can be traced directly to the increase in the number of foreign vessels fishing off the New England coast. . . . the New England fishing industry is being savaged." "The signs of the devastation of the industry are evident in the ports of Eastport, Maine; Gloucester; Boston; and New Bedford, where fishing was once the primary industry," Representative Silvio Conte of Massachusetts said. "Boats lie idle and the fish markets are sparsely stocked. . . . The supply of haddock, yellow-tailed flounder and herring may be depleted so badly that it is unrecoverable unless we stop this decimation immediately." "The decline of our fishing industry due to foreign overfishing and the massive invasion of the foreign fleets during the early 1960s is well documented," Representative Peter Kyros of Maine reported. "Anyone in New England can see this by visiting fish piers, seeing the returning catches of our fishermen, or by pricing haddock, cod and flounder." Senator John Pastore of Rhode Island told his colleagues, "Hundreds of fishermen were driven from their livelihood on the sea as foreign fleets virtually exterminated haddock. For years the fishing fleet of Gloucester, once the greatest fishing port in America, struggled for survival." According to Senator Edward Kennedy of Massachusetts, "the New England

commercial fishing industry continues to decline even while the total catch in New England waters is depleting the resources. . . . Between 1950 and 1967 in Gloucester the number of crewmen declined from 1643 to 700. The number of fishing vessels decreased from 196 to 110 during this same period." Furthermore, congressmen and senators repeated again and again, the fish harvested from New England banks returned to the United States for consumption. "Much of this foreign catch is then exported to the United States where it often sells for less than that which is caught domestically," Representative William Cohen of Maine said.[18]

A few industry voices joined those of the public officials. Hugh O'Rourke, head of the Boston Fisheries Association and spokesman for the New England Fisheries Steering Committee, spoke of "the tremendous inroads that have been made by foreign fishing vessels on the fishing stock in Georges Bank area. . . . The economic effect upon the fisheries is quite evident, with reduction of fishing vessels, processing plants, and employment" since 1960. Bernard Lewis, president of Associated Fisheries of Maine in Portland, reported on the decrease in numbers of groundfish processing plants and the decline in groundfish landings after 1960. "We suggest to you, gentlemen, in the strongest possible terms," he said, "that this decrease of 50 percent is directly attributable to a sustained and irresponsible fishing effort by foreign fleets which took from our traditional waters not only the food fish . . . they also took the

breeding stocks which have sustained our yields for untold numbers of years."[19]

Such statements were unusual, however, For the most part, groundfish representatives knew that the foreign fleets had not caused all the economic problems of the 1960s; indeed, they integrated the old explanations with the new. Members of the groundfish industry knew, although elected officials did not, that the foreign fleets depleting the fish resources were not the countries which supplied groundfish to American markets. Those nations, primarily Canada and Iceland, fished their own traditional grounds and were waging their own struggles with the same foreign fishing fleets.

Improvements in Groundfish Industry Fortunes in the 1970s

Furthermore, nearly all groundfish spokesmen knew that the problems were disappearing for which they and their predecessors had sought cures for so many years. During the early 1970s wages and the profits from boat and plant operations rose. In 1973 Gloucester landings brought higher revenues than any year since 1951. While total Gloucester fishing revenue fell somewhat in 1974, offshore groundfish industry fortunes improved greatly that year, fishing spokesmen say. Between 1974 and 1976 Boston and Gloucester total offshore boat earnings rose more than 35 percent, well ahead of the rate of growth in the rest of the economy.[20] Through the early 1970s the numbers of offshore groundfish boats had continued to decline. According to one account, eighty

boats from Gloucester and Boston fished the offshore banks for groundfish in 1971; only sixty-five groundfish boats worked offshore in 1974.[21] Therefore, the larger revenues meant even greater increases in incomes for individual boats. The number of crew working on each vessel had declined, too. In some cases, the new technology of stern trawling made boat operation possible with fewer crew than older side trawler methods. Even for the side trawlers, however, the lower catches per fishing day as the stocks became depleted meant that fewer men could clean and pack the fish. Therefore, crew incomes probably rose even faster than the boat incomes. By 1974 crewmen on Gloucester offshore boats were earning more than ever before, $15,000 to $20,000 per year.[22]

The Prosperous Industry's View of the Foreign Fishing Problem

As income rose, fishermen, processors, and boat owners in the groundfish industry saw the foreign fleets taking the fish which they felt would have allowed them to earn even more, to purchase new boats, and to expand their plants. Furthermore, the foreign fleets' activities made their own futures uncertain because no one could be sure there would be fish to harvest within a few years. As Spencer Apollonio, commissioner of the Department of Marine Resources in Maine, said, "The landed value of Maine's fisheries--the dockside price paid to our fishermen in 1973 was in excess of $40 million--an alltime high record figure. . . . We hear much too frequently from uninformed people, some

of whom should know better, that the fisheries are a dying industry. . . . The record landed value . . . prove[s] that market demand for sea products is high and getting stronger." However, the future seemed less favorable: "Continued failure to establish rational jurisdiction over the offshore fisheries and to provide reasonable management of the harvesting of those stocks will result in further and serious disruption of our coastal economy."[23]

Despite the uncertainty and their complaints about foreign fishing, some fishermen planned expansion to take advantage of the good times while they lasted. In Gloucester a few fishermen ordered expensive new vessels after 1973, the first orders since one in 1970 and more new investment activity than at any time since the early post-World War II years.[24]

The Other Fishing Interests Concerned about the Foreigners

The prosperity of fishermen and boat owners in the groundfish industry made them more like the other groups worried about the foreign fleets' fishing activities off the New England coast. From the early years of the foreign fishing activity, well before the groundfish industry redefined the source of its problems, better-off segments of the industry had voiced anxiety about the future of their prosperous fisheries. One of the first to take their concerns to Congress was the Point Judith Fishermen's Cooperative Association, made up of inshore fishermen involved in diverse fin fisheries. Traditionally, said Jacob Dykstra, the

president of the coop, Point Judith Fishermen had ranged over the continental shelf from Nantucket Shoals to Virginia and occasionally as far as Georges Bank with no competition from foreign vessels. They had "maintained a steady and prosperous fishery," but the huge foreign catches would destroy the fish resources on which they had depended. In 1966 the fishermen in Point Judith already felt the effects of depletion and pressured the State Department to act. "The fact was that . . . our fisheries were almost out of existence on" red hake and whiting, said Donald McKernan, assistant to the secretary for Fisheries and Wildlife in the Department of State. "We were, for all practical purposes, losing these traditional fisheries in the mid-Atlantic area, Long Island, Point Judith, R. I."[25]

Representatives of the prosperous New Bedford industry also protested the foreign fleets' activities, not so much because they felt pressures themselves as because they feared the potential effects as they observed the harm to other groups. "Because of the concentrated fishing efforts of the Russian fleet with their small-mesh nets, a great number of vessels have stopped fishing for whiting because they cannot catch enough fish to be economically profitable," said Jacob Ostensen, port agent for the New Bedford Fishermen's Union. According to Howard Nickerson, a former fisherman and executive director of the Harbor Development Commission in New Bedford, "We . . . recognize the fact that vessels in these fleets have little regard for the conservation of the fisheries and are only interested in securing the greatest possible yield

of fish in the shortest possible period of time. This situation can, in the years to come, so deplete the ability of our fisheries to restock themselves that a great natural resource can be taken from us."[26]

In the early 1970s as new opinion in the groundfish industry took shape, virtually every other New England fishing group also expressed anger and alarm at the foreign fleets' activity and its effects. Offshore lobstermen complained vociferously about the foreign fleets during the early 1970s. After 1966 several small companies had purchased gear, invested in boats, and learned the new technology to exploit the recently discovered offshore lobster stocks. Immediately they had run into conflicts with the foreign fleets. By the early 1970s their difficulties had developed into "offshore gear war." The lobstermen set hundreds of traps on lines along the edge of the continental shelf, on the outer fringes of Georges Bank, and returned to pull their traps and remove the lobsters a few days later. Frequently, however, they discovered that fishing vessels had towed through their gear and cut off the lines so that the lobstermen lost thousands of dollars worth of equipment on the ocean floor or in the nets of the trawlers which lobstermen almost always presumed were foreign. On many occasions they watched groups of foreign trawlers run across their lines. "The foreign fleets, with obvious disregard for our rights, are destroying our equipment, endangering the lives of our American fishermen, and raping the great fish supply which we have historically fished as Americans," the president of the largest offshore lobster company complained. Richard Allen of the Atlantic Offshore Fish

and Lobster Association described "the despair and frustration which our fishermen feel when they go out to tend their gear and it has been destroyed by foreign trawlers. Few of our fishermen dare to carry guns on their vessels for fear that they would use them as they watch their livelihoods being destroyed."[27]

In the early 1970s the offshore lobstermen noted catch rate declines of 20 to 30 percent per year. Many blamed the foreign fleets, convinced that the foreigners harvested large quantities of lobsters. Occasionally lobstermen reported seeing foreign boats taking lobsters. The drop in the catch rates in the fishery "could not be explained by an analysis of the U.S. fishing effort," according to Richard Allen. He reported rumors of substantial landings of lobsters in foreign ports. Regardless of their views on the extent to which foreigners harvested lobsters, nearly all fishermen and state fishery officials feared that the foreign boats would turn their efforts towards the lobster stock at any time and virtually wipe it out.[28]

Partyboat captains, another group raising voices against the foreign fleets, reported that while sea bass, porgies, and fluke had been the backbone of charter and partyboat business in southern New England and the mid-Atlantic states, Russians had decimated those fish stocks. "The only reason that the Russian slaughter didn't destroy the partyboat business was that each year we enjoyed tremendous runs of bluefish," said Allan J. Ristori, chairman of the Emergency Committee to Save

America's Resources, the partyboat captains' newly formed organization. "What will happen to the hundreds of party and charter boats dependent on this fishery if the bluefish disappear?"[29]

Successful political organizing reflected the breadth of the concern among fishing interests and the strength of their feelings. In 1971 diverse New England fishing interests formed the New England Fisheries Steering Committee at the initiative of Gayle Charles, manager of the Provincetown Cooperative Fishing Industries. The Steering Committee eventually included representatives from every major port and every type of fishing. The organization aimed to influence federal policy towards fisheries because "New England fishermen and fishing communities have been a marginal consideration where national policy is concerned," Gayle Charles said. In the next years, however, most of their energy went into efforts to address problems with the foreign fishing fleets.[30]

During 1973 ten fishing organizations representing approximately 8000 fishermen formed the eastern division of the National Federation of Fishermen, according to William Mustard, a director of NFF. While the national organizers spoke of general "fishery interests" and "common problems," most groups joined because of their concern about foreign fishing activity. Groups opposed to government action to constrain foreign fishing activities did not join National Federation of Fishermen.[31]

Both the Steering Committee and National Federation of Fishermen drew strength from long-established organizations of boat owners and

processors, fishermen's unions, and cooperatives. In addition, some local groups formed around the foreign fishing issue. In Gloucester in 1971, for example, boat owners and a handful of processors asked James Ackert, formerly president of the Atlantic Fishermen's Union, to head a new organization, the New England Fisheries Association, which would present a unified position on foreign fishing activity and other industry concerns.[32]

The broad base of industry concern in New England made the new conditions distinctly different from those of the 1950s and 1960s when the groundfish industry had nearly always suffered and protested alone. Indeed, the concern came from a constituency much broader than New England interests. Fish stock depletion was much worse off the New England coast than anywhere else, and the stocks hardest hit were groundfish and yellowtail flounder with herring close behind. However, fishermen in the mid-Atlantic states felt the depletion from the fleets fishing south of New England. On the West Coast foreign fleets had arrived in the Bering Sea in large numbers in the early 1960s to fish for bottomfish and, in some cases, salmon. Fishermen from Washington, Oregon, and Alaska had begun to protest the presence of the foreign fleets by the mid-1960s, and the National Federation of Fishermen got its start on the West Coast. As fishing pressures drastically reduced the fish stocks in the northwest Atlantic by the early 1970s, the fishermen on the Gulf Coast worried that the foreign fleets would move on to their traditional fishing grounds.[33]

Efforts to Relieve Foreign Fishing Pressures

The solution to the difficulties with the foreign fleets seemed clear to New England fishermen, boat owners, and dealers. Ideally, they wanted to see foreign fishing prohibited on their traditional grounds. If that were not possible, they wanted foreign fishing efforts severely restricted. New England fishing interests saw two major ways to try to accomplish these aims. First, they could attempt to influence multilateral fishing agreements under which New England fishermen would share the resources with foreign fishermen. The International Commission for the Northwest Atlantic Fisheries (ICNAF) could act to reduce pressures on the New England fish stocks. South of Rhode Island and Connecticut, outside the ICNAF area, the State Department could negotiate agreements with individual fishing nations. Issues of fishery controls were a major part of the negotiations at the Law of the Sea conferences; the outcome of the deliberations could affect foreign fishing rights off the coast profoundly. Second, fishing representatives could pressure for unilateral U.S. action to declare exclusive jurisdiction over the coastal fishing grounds. Such action would give New England fishermen first claim to the resources and exclude or reduce foreign activity. From the early years of their concern, New England fishing interests preferred the latter approach. Jake Dykstra of Point Judith and fishing representatives from New Bedford called for extension of fishery jurisdiction to 200 miles in 1966. Wives of Gloucester fishermen traveled to Washington in the late 1960s to

demonstrate for a 200-mile limit.[34] However, the New England spokesmen found little support for extending fishery jurisdiction and considerable opposition to such action from the administration. They decided to get what they could from the multilateral approaches as long as those were the only directions which offered hope.

International Commission for the Northwest Atlantic Fisheries[35]

The most obvious forum in which New England fishing interests could hope to influence decisions about controlling the intensity of foreign fishing was the International Commission for the Northwest Atlantic Fisheries. By the mid-1960s ICNAF was a well-established institution. It had been founded in 1950 to meet the need for an international body to cooperate in "the investigation and conservation of fishery resources in the Northwest Atlantic," according to Secretary of State Dean Acheson and his delegates to the international fishery meetings of the late 1940s.

That need had become apparent for two major reasons. First, evidence showed depletion of important fish stocks. "The number of marketable-sized haddock is now at an all-time low," Acheson wrote. "Fishing for rosefish [redfish] has been very heavy in recent years and the abundance of this fish has been gradually reduced to the point where United States vessels have found it necessary to travel much farther from port in order to find commercial quantities. The catches of cod from the New England banks are likewise reduced and an increase in the number of lengthy and expensive trips to the Nova Scotian banks has become necessary.

Catches of halibut have gradually dwindled through the years." Second, the pressures on the threatened stocks could increase. The postwar otter trawl fleet was larger than at any other time in history. The North Sea and other European fishing grounds were badly depleted, and fleets in search of more plentiful resources might make the trip to the New England banks. ICNAF, set up to handle these problems, was "designed primarily to provide for international cooperation in the coordination, collation, and dissemination of information concerning the fisheries of the northwest Atlantic Ocean, but also provides a procedure for cooperative action by the contracting governments regarding measures deemed necessary to maintain a maximum sustained yield from the fisheries," explained the delegates to the conference which drafted the fisheries agreement. "In the long run," the delegates noted optimistically, "it provides a means of meeting a situation in the future, with the potential expansion of fishing by other nations in the convention area, before the situation reaches a crisis stage analogous to that at present prevailing in the North Sea."[36]

1. ICNAF's Early Activity

In its most important decision for New England fishermen in the years before the arrival of the foreign fleets, ICNAF regulated mesh size in the haddock fishery. Even before World War II, some parts of the fishing industry and fishery biologists had agitated for regulations requiring larger mesh for the haddock fishery in order to reduce the

destruction of very small fish and increase the yield from the grounds. Other industry groups, however, opposed controls on American fishermen without restraints on Canadians and other foreigners who might utilize the haddock stock. International agreement through ICNAF dealt with those objections, but in an indication of problems that would arise later, ICNAF took several years to put even such widely supported regulations in place. The new mesh rules took effect in mid-1953, more than two years after the U. S. commissioners had proposed them at the first ICNAF meeting.[37]

Fishermen and boat owners generally accepted the rules, although some problems with enforcement and violations arose. The Fish and Wildlife Service biologists researching the effects of mesh regulation reported that over twelve million baby haddock were saved from the Boston fishing fleet in the first year the mesh regulation was in effect. Fishermen actually caught more haddock with the larger mesh, they said, because they caught marketable fish rather than very small ones which were discarded at sea. In the years that followed, ICNAF occasionally revised and extended the mesh rules to improve enforcement, to cover more fishing grounds, and to take account of haddock bycatch by fishermen in directed fisheries which the mesh regulation did not cover.[38]

For the most part, however, ICNAF functioned as a center for scientific communication and data gathering. It became an invaluable source of information on the harvests of northwest Atlantic resources and of studies about the character and abundance of those resources and the

potential effects of fishing pressures on them. Decisions at annual meetings often did not even merit note in fishing industry publications during the 1950s and early 1960s.[39]

ICNAF worked smoothly because, despite the concerns of State Department officials, fishery biologists, and some industry representatives, fish stocks were not in trouble, as better understanding of fishery biology gradually suggested. Furthermore, increased fishing by New England trawlers and Europeans which might have caused depletion, did not occur. ICNAF had no controversial decisions to make and no crises to handle. The idea of trying to manage the use of fish resources through international organizations was quite farsighted in the 1940s, but the drafters of the ICNAF convention could not have foreseen how intricate international politics would be or how urgent action to reduce fishing pressures would become when new technology and investment in large numbers of vessels added to the speed with which countries could exploit a fish resource. In 1950 no one had ever tried to manage the use of fish resources on such a scale, and no one had thought very much about the economic and biological considerations in such an undertaking. The founders of ICNAF could not have foreseen the pitfalls of the management techniques they outlined.

2. Increasing ICNAF's Ability to Respond to Changing Fishing Pressures

In the early 1960s as the foreign fleets began to fish heavily on Georges Bank, ICNAF faced its first major challenge and demonstrated

that it could not act effectively to prevent severe depletion, a major purpose for which it had been founded. Weaknesses in the terms of the ICNAF convention became apparent almost immediately. Although ICNAF could regulate the use of the fish resource in certain ways, the convention made no provisions for enforcement of ICNAF regulations. Therefore, by default, the nations whose vessels fished in the ICNAF areas had responsibility for assuring that their fishermen followed the rules.[40] Legislation which Congress passed to implement the treaty defined enforcement procedures the government could use against United States vessels. Other nations could adopt quite different measures or, conceivably, none at all. They could also neglect to carry out authorized enforcement. Commissioners from the coastal fishing nations and their industry advisors suspected that fishermen from distant-water nations ignored the ICNAF rules and that those nations had no enforcement programs. ICNAF commissioners faced the prospect that no matter what they decided, few fishermen might be required to abide by the decisions.

ICNAF's limited regulatory powers over fishing activity also handicapped the organization. The convention specified the types of regulations ICNAF could put in place.[41] ICNAF needed more flexibility and a broader mandate in order to hope to act effectively in the complicated management of international use of fish resources.

The procedures for implementing ICNAF decisions meant that a proposal became a regulation only after several years, if it ever did.

Jake Dykstra of Point Judith, an industry advisor to ICNAF, described the process: "what experience I have had with this, this business of sitting down and talking is protracted operation. Under the treaty . . . when the member nations decide that there is something that needs attention, the first thing they do is try to agree that there is a problem, and they say they will go back to their member nations and talk this thing over . . . and come back next year with some sort of a proposal. They bring back a proposal, and we all look it over and we have to make some changes, so we go home again with it, and then when we finally do agree, in 2, 3, or 4 years, it takes several years to ratify it." Fishing pressures could change dramatically and fish stocks could be considerably depleted between the time ICNAF initiated a proposal and the time fishermen had to observe it.[42]

At meetings during the 1960s the member nations discussed some new regulations on fishing, but the most important action involved amending the treaty under which ICNAF operated so that ICNAF could enforce its regulations, use more effective management techniques, and act more quickly. The changes did not occur until the end of the decade. In 1963 the United States proposed that the commission establish international enforcement measures. An amendment to the convention did not go into effect until 1969, and not until 1971 did ICNAF put a joint system of enforcement in place. Under that plan inspectors from any ICNAF nation could board the vessels of another ICNAF nation to check for compliance with regulations. In 1964 the United States proposed

amendments to put regulations in effect within six to nine months if no member nation objected. That measure became effective in 1969; by then even the six to nine months' waiting period seemed too long. In 1969 the United States proposed amendments to allow ICNAF to adopt any appropriate measures to achieve the optimum utilization of the fish stocks. That change went into effect in 1970.[43]

3. ICNAF's Failure to Control Fishing

Finally in 1969, the conditions of the fisheries had become desperate enough and the international machinery sufficiently malleable for ICNAF to act decisively. Faced with severe shortages of haddock the commission established annual quotas for haddock for 1970 on Georges Bank and Browns Bank and closed spawning areas to fishing. ICNAF lowered the haddock quota, set quotas on yellowtail flounder on Georges Bank and in southern New England, and prescribed a minimum mesh size for yellowtail in 1971. At the 1972 meeting ICNAF set quotas for most of the important species. For the first time ICNAF specified national rather than overall quotas and recognized that coastal states had stronger claims to the resource than other nations. The United States and Canada received the largest shares of the total quotas. In 1973 the ICNAF nations agreed to a three-year series of reductions in catch without cutting the quota for American and Canadian fishermen. By the end of that time, the stocks would have recovered, the commission stated, and new quotas could assure that damage would not occur again.[44]

By 1973, however, virtually all New England fishing interests, their congressional representatives, state fishery administrators, and fishery biologists had lost confidence that ICNAF could successfully regulate the use of the offshore fishery resources. As far as most were concerned, ICNAF had demonstrated its incompetence. "As the case of haddock testifies--a species which ICNAF has concentrated its greatest effort in managing--the Commission has been incapable of acting in time to prevent the decline of a species. It only reacts after the tragedy has occurred. The international machinery is so time consuming that it cannot hope to keep pace with the technological capabilities of the foreign fishing nations involved," said Arthur Brownell, commissioner of the Massachusetts Department of Natural Resources, in an echo of many others' comments. "It is a travesty that this international commission, rather than promoting wise use of the resource has instead lulled the general public, the administration, and Congress into a false sense of security while the fisheries were being overexploited," said Frank Grice, the director of the Massachusetts Division of Marine Fisheries.[45]

Even with the changes in its operating structure, ICNAF's actions only made the unfavorable impressions worse. ICNAF moved only under extreme pressure, pressure which could only be exerted because U.S. interests were so disenchanted. In 1972 when ICNAF allocated national quotas, the U.S. advisory group had voted to urge the United States to leave ICNAF. With that pressure behind them the commissioner to ICNAF from the Department of Commerce blasted ICNAF's

ineffectiveness at a commission meeting and James T. Lynn, Under-secretary of Commerce, told another meeting, "We in the U.S. are convinced that the fisheries in the northwest Atlantic can survive only if there is a well-nigh revolutionary change within the commission equalling the revolutionary change in fishing, or alternatively, if the commission and the international cooperative approach, which it symbolizes, are abandoned in favor of another approach. . . . I must say that the United States is ready to accept another solution involving juridical changes before it will tolerate the destruction of U.S. fisheries." In 1973 when ICNAF hammered out its most extensive agreement, the United States had threatened again to withdraw from ICNAF, congressmen had introduced bills to extend the fishery jurisdiction of the United States to 200 miles, and the working sessions of the Law of the Sea conference were producing negotiating texts which favored coastal nation control of fish resources.[46] Only then did the distant-water fishing nations go along with American and Canadian proposals to some extent. Canada and the United States, whose fishermen could not move on to other grounds, had the largest stake in saving the coastal resources.

Even when pressures forced ICNAF to act, however, the decisions did not go far enough. The quotas far exceeded what U.S. biologists and fishing observers thought they should be. Jake Dykstra described the negotiation process which produced particularly high quotas: "The first thing is that the scientists get together and they set what the allowable catch is from a stock of fish. Well, naturally all of these

nations want to fish as much as possible, so the scientists attempt to set the allowable catches just as high as they can . . . then the politicians have to come in and divide this allowable catch, put it into quotas, and add it up into an overall quota. Then the politicians take another whack at this. They raise it. So you have another rise above where it should be." Donald Horton, a biologist and director of the Research Institute of the Gulf of Maine, reflected the views of many when he suggested, "Indeed . . . ICNAF quotas have perhaps encouraged the overexploitation of dwindling fish stocks in the north Atlantic."[47]

Once the quotas were prescribed, they had little relation to the amounts of fish harvested. The new ICNAF enforcement mechanisms were still ineffective. "We don't have any authority to go out there and actually check on what those vessels are doing," Jake Dykstra said. "We have agreements; we can go aboard the vessel. But if that skipper of a vessel says, 'This is a sovereign part of my nation and you stay off,' we have no way in which we can force our way aboard that vessel."[48]

ICNAF removed those restrictions on inspections at the 1973 meeting, but enforcement still could not be effective. The National Marine Fisheries Service agents could not inspect the large numbers of foreign vessels often enough to be sure that they observed regulations. Illegal catches could quickly be converted to fish meal. "Unless you have been to Georges Bank, you can have little idea of the magnitude of the enforcement problems that quota regulation entails," said Christopher Weld of the National Coalition for Marine Conservation.

"In an area of about 5 by 50 miles there were several hundred vessels. Yet the Enforcement and Surveillance flight . . . just 2 days earlier reported a total of 12 foreign vessels in the normal search area. This example is . . . cited . . . to demonstrate the difficulty of covering the large areas involved with the equipment and resources available."[49]

If the United States found violations during an inspection, State Department officials informed the boat's government; the responsibility for following up on the violations rested with that country. U. S. inspectors said they did not know whether or how the distant-water fishing nations handled the violation notices. The National Marine Fisheries Service was essentially giving out parking tickets, said William Gordon, the deputy director of NMFS in the Northeast.[50]

Even if enforcement could have worked properly, the quota system left loopholes which fleets found in order to catch larger amounts of fish. For example, after a country came close to catching its quota, it could continue to bring in incidental catches which pushed the total catches far over the quotas. As Thomas Norris of Old Colony Trawler Company in Boston, an ICNAF industry advisor, pointed out, "A trawler fishing for a certain species is allowed to take or have in possession 10 percent of a restricted species. With large catches of herring and mackerel by the foreign fleets the 10-percent allowance of other restricted species could be more and often is more than the directed fisheries of the U. S fleet. We believe this is why the recovery of haddock or any other species cannot occur under the present system." New nations could start fishing

and could harvest large amounts of fish in the ICNAF area without joining ICNAF, Spencer Apollonio, Commissioner of the Department of Marine Resources in Maine pointed out. "ICNAF only consists of 16 nations," he said. "There are a lot of other nations which can fish and do fish."[51]

4. Other Reasons for Industry Disillusionment with ICNAF

Fishermen's and boat owners' objections to ICNAF went much farther than these concerns about the ineffectiveness of conservation efforts. ICNAF forced regulation on New England fishermen in a significant way for the first time. Restrictions on their fishing infuriated fishermen who did not see why they should suffer for the damage of the foreign fleets and ICNAF's early ineffectiveness. In late 1970 ICNAF prohibited boats from catching more than incidental amounts of haddock as the total catch approached the overall annual quota. The National Marine Fisheries Service, responsible with the Coast Guard's assistance for enforcing the regulations for U.S. boats, charged captains who brought in more haddock with violating ICNAF rules and fined them. "We have received a great many complaints from the fishing industry," Russell T. Norris, regional director of the National Marine Fisheries Service, said. "With all the warning we gave and the releases put out they still didn't believe that the ban would go into effect."[52]

The overall quotas gave an advantage to large, distant-water vessels, the New England fishermen said, because they could get at the stocks in any weather and more persistently. They would leave nothing of the quota

for U.S. fishermen. "The International Commission for Northwest Atlantic Fisheries has put us in a position so we can't make a living. We feel that we should have an input in U.S. policy. We don't feel we have this now," said Gayle Charles, the manager of the Provincetown Cooperative. One spokesman for the New Bedford fishing industry declared, "We are fighting to save the New Bedford fishing industry. If quotas proposed for this year are enforced, New Bedford fishing will go down the drain."[53]

National quotas did nothing to ease the resentment. A meeting in Gloucester in late 1974 between fishermen and enforcement officials of National Marine Fisheries Service reflected the fishermen's views. They wanted no quotas on haddock for the U.S., they said. They objected to throwing away fish in order to stay within the ICNAF catch limits. Fish they caught were already dead; therefore, ICNAF rules enforced waste. Mesh regulation alone provided enough restriction, one captain said. American fishing techniques, the fishermen claimed, did not deplete the stocks; foreign midwater trawling did. "With ICNAF for a friend, we don't need enemies," said Michael Orlando, the administrator of the Gloucester Fishermen's Welfare and Pension Plan. During at least one ICNAF meeting American industry representatives pushed for higher quotas on haddock than U.S. fishery scientists thought were wise.[54]

The enforcement methods angered fishermen, too. Each year the National Marine Fisheries Service charged some captains with violations

and fined them or, on repeated violations, confiscated their catch. On the other hand, the fishermen said, National Marine Fisheries Service only slapped the wrists of foreign violators. In 1975 the Soviet Union and Poland stepped up a program of boarding U.S. vessels to find ICNAF violations. With the combination of foreign and NMFS inspections, fishermen were convinced that they were unfairly forced to observe the rules. "We go along with the regulations," one captain said, "but it seems as if we're the only guys that have to abide by them." When six British vessels illegally caught enormous amounts of haddock, Michael Orlando said, "They ought to hang them. . . . If it happened to our boats, they'd hang us. It looks like they'll get away."[55]

Fishermen in the groundfish industry became more certain that they did not want effective ICNAF control. They preferred severe restrictions on other countries' fishing with fewer regulations on their own although many admitted that American fishermen undoubtedly had to face constraints, too. Extension of U.S. jurisdiction over the fishing grounds would achieve these goals, fishermen were certain. When congressmen introduced bills for a 200-mile fisheries limit, however, the administration vehemently opposed the efforts. Wait for the Law of the Sea conference, they said again and again. These issues should be settled through international agreement. "Unilateral legislation on our part would almost certainly prompt others to assert extreme claims of their own," Secretary of State Henry Kissinger warned as had the State Department representatives on the Law of the Sea delegation.

"Our ability to negotiate an acceptable international consensus on the economic zone will be jeopardized. If every state proclaims its own rules of law and seeks to impose them on others, the very basis of international law will be shaken, ultimately to our own detriment."[56]

Fishing industry representatives already knew about the Law of the Sea conference. They had been pushing the U.S. negotiating team to give more weight to the desires of the fishing industry since 1971 when the preparatory meetings for the third conference began. Events at the Law of the Sea conference had only strengthened their conviction that the United States had to act unilaterally.

The Conferences on the Law of the Sea

In 1957 the General Assembly of the United Nations had called for a conference of its members to "examine the law of the sea, taking account not only of the legal but also of the technical, biological, economic and political aspects of the program, and to embody the results of its work in one or more international conventions or such other instruments as it may deem appropriate."[57] The U.N. had convened Law of the Sea conferences in 1958 and 1960, and the negotiations had produced some decisions of importance to the fishing industry.

1. Results of the First Two Conferences and Fishing's Role

The central issue facing the 1958 meetings was the breadth of the territorial seas. The United States sought to keep territorial seas as

narrow as possible in order to protect free transit of straits for military and merchant vessels, but when the conference could not agree, the United States suggested extension of territorial seas to six miles and jurisdiction over fisheries to another six miles beyond the territorial sea. "Our Delegation believed that this proposal accommodated the sincere interests of all states represented," wrote Arthur Dean, the chairman of the United States delegation. "Since each state controls fishing rights in its own territorial sea, the economic interests of states dependent upon their fishing industries would have been served by allowing them a twelve-mile zone for fishing. At the same time it would have preserved six miles of that twelve-mile zone as high seas, and thus, to that extent, defeated those who sought to extend the territorial sea to twelve miles for military as distinct from economic purposes." Although the proposal received a majority of the votes, it failed to receive two-thirds of the votes, the number needed to adopt an official convention.[58]

A second conference on the Law of the Sea convened in 1960 to resolve issues of the breadth of the territorial sea. A renewed proposal for a six-mile territorial sea and six more miles of fishery jurisdiction failed by one vote to receive the two-thirds majority needed.[59]

East coast fishing interests had not participated in either conference although a State Department official who was an authority on northwest Atlantic fisheries and representatives from the Fish and Wildlife Service, the National Canners Association, and the National Shrimp Congress did advise the U.S. negotiators. In 1958 and 1960 New England groundfish

interests believed that extension of fishery jurisdiction to twelve miles would hurt them because they fished within twelve miles of Canada. They had nothing to gain from extension of fishery jurisdiction because few foreign vessels fished close to their own coasts The U.S. negotiating team was willing to sacrifice these fishing interests to limit claims to wide territorial seas, however. According to the chief U.S. negotiator in 1958, Arthur Dean, "many a delegate . . . praised the United States for its creative imagination and good will in making the proposal despite the economic detriment to its fishing interests." In 1960 "the sacrifice inherent in the joint proposal" from Canada and the U.S. on fishing jurisdiction, Arthur Dean stated, "was offered in the hope of achieving agreement at the Conference on a territorial sea limited to 6 miles . . . while protecting American fishing interests against unilateral claims for at least 10 years. Thus, it is not correct to say that security interests overrode all consideration of American fishing interests; it was a question of timing and of balance."[60]

The conference did adopt other conventions which had the potential to affect fishing interests. The Convention on the Continental Shelf gave coastal nations sovereign rights over the exploration and exploitation of the natural resources of the continental shelf. Natural resources meant the "mineral and other non-living resources of the seabed and subsoil together with living organisms . . . which, at the harvestable stage, either are immobile on or under the seabed or are unable to move except in constant physical contact with the seabed or the subsoil."

The Convention on Fishing and Conservation of the Living Resources of the High Seas supported the right of all countries to fish on the high seas but declared that they had an obligation to cooperate in multilateral conservation measures. "A coastal state," the Convention stated, "has a special interest in the maintenance of the productivity of the living resources in any area . . . adjacent to its territorial sea." The coastal nation could adopt unilateral conservation measures if international negotiations failed to reach agreement within six months, but these measures could not discriminate against foreign fishermen.[61]

The Senate ratified both conventions in 1960. The Convention on the Continental Shelf entered into force in 1964 when the required number of countries had become parties to it. Legislation passed in 1964 implemented the treaty. The law allowed the Secretary of Commerce in consultation with the Secretary of State to specify the species considered continental shelf fishery resources. The Secretary of Commerce could write regulations for enforcement of the legislation. The Convention on Fishing and Conservation of the Living Resources of the High Seas entered into force in 1966, but the administration did not propose implementing legislation until 1973. By then the National Marine Fisheries Service hoped to use the Convention as legal basis for management of domestic fisheries.[62] Until 1973, neither convention touched the New England industry.

Part of the explanation for the conventions' lack of influence on the New England fishing industry had to do with their acceptance by other

countries. At least until new species were added to the list of resources of the continental shelf in 1971 and 1973, the Convention on the Continental Shelf was widely accepted. Although only fifty-one nations had ratified the Convention by 1973, those included many of the nations fishing in the northwest Atlantic. The Convention may essentially have codified what was already the usual international practice, and, therefore, no behavior changed. In contrast, only thirty-three nations had ratified the Convention on Fishing and Conservation by 1973. Of the nations fishing off the coast of New England, only Portugal, Spain, and Great Britain had become parties to the treaty. Therefore, exercise of the coastal state's rights under the Convention would have constituted unilateral action which the State Department deplored and which indeed might have been ineffective in dealing with fishery problems. The United States never used the Convention on Fishing and Conservation to ease the problems with ICNAF or to handle international fishing disputes off the mid-Atlantic coast where ICNAF did not have authority.[63]

2. The Third Conference: U.S. Position on Fisheries Control

By 1971 when the preparatory sessions for the third conference on the Law of the Sea opened with the objective of achieving a comprehensive treaty, the concerns of the American fishing industry and the conditions in fishing were quite different than they had been in 1958 and 1960 before the foreign fleets arrived. Nevertheless, the U.S. position on fisheries jurisdiction resembled the 1960 statement. Between the close

of the 1960 conference and 1971 a twelve-mile fisheries zone had become accepted international practice. Outside that twelve-mile fisheries limit, the U.S. negotiators suggested, international organizations such as ICNAF should govern the use of fish resources. In March 1972, however, at the beginning of a second round of preparatory sessions, Donald McKernan, special assistant to the Secretary of State for fisheries and wildlife, announced a new position, the "species approach," which called for coastal state management of coastal fish stocks and anadromous species, such as salmon, which spawned in fresh water but spent their adult lives in salt water. The coastal nation would have preferential rights to the use of these resources throughout their migratory range but would have to allocate unutilized resources to other nations. International organizations would manage the use of highly migratory species such as tuna. As the Law of the Sea conference finally convened in 1974 in Caracas, Venezuela, the U.S. delegation offered yet another revision of the U.S. position on fisheries jurisdiction. "We are prepared to accept, and indeed we would welcome," said the chief of the U.S. delegation, John Stevenson, "general agreement on a 12-mile outer limit for the territorial sea and a 200-mile outer limit for the economic zone provided it is part of an acceptable comprehensive package, including satisfactory regime within and beyond the economic zone and provision for unimpeded transit of straits used for international navigation." The coastal state would have control over the use of coastal and anadromous fish stocks with conservation and full utilization duties, as in the earlier U.S.

position. The coastal nation would manage the use of highly migratory species within its economic zone in accordance with international regulations.[64]

The shifts in the U.S. fishery position reflected in part trends in opinion among other countries. The U.S. had no chance of limiting a fisheries zone to twelve miles with provisions for international management systems beyond the twelve miles. Underdeveloped countries, especially those in Latin America, favored strong coastal state control, and several had already unilaterally extended their jurisdiction over fisheries to 200 miles. "What we have learned about the concerns of other states has led us to reconsider our own initial position on fisheries in response, in particular, to the economic and social needs of the coastal states," Donald McKernan said. According to John Stevenson, "The developing coastal countries . . . just don't have that much confidence in regional and international organizations." In 1974 when the U.S. position shifted again, Stevenson said, "In the course of listening to and reading the statements made during the last two weeks, I have been struck by the very large measure of agreement. . . . Most delegations that have spoken have endorsed or indicated a willingness to accept, under certain conditions and as part of a package settlement, a maximum limit of 12 miles for the territorial sea and of 200 miles for an economic zone." Therefore, he said, the United States had reconsidered its own statement.[65]

3. The Influence of Industry Interests on the U.S. Position

The direction of opinion among other countries was certainly crucial in causing the U.S. to shift its stance on fisheries. Each change in the United States' position, however, also reflected the opinion of the United States fishing industry representatives. The fishing interests in the United States had achieved sufficient political stature to prevent the State Department from sacrificing their needs in order to achieve other goals.

In June 1971 the National Federation of Fishermen held meetings to formulate a position on fishery jurisdiction for the Law of the Sea conference. The organization proposed a three specie scheme, virtually identical to that of the U.S. position the next year. Coastal nations would have "ownership" of fish and shellfish resources of the waters of their continental shelf. If those resources were underutilized, the coastal nations would make provisions for other nations to use the stocks. The country where anadromous fish spawned would own them, the NFF stated, but would have to work out harvesting agreements with nations that harvested the fish in their own territorial waters at other stages of the fish's life. International organizations would manage the use of highly migratory species such as tuna; no nation would own those stocks. The New England Fisheries Steering Committee suggested a similar approach, but their call for coastal nation management was weaker than the National Federation of Fishermen's proposal for "ownership" of the coastal and anadromous species.[66]

During the Law of the Sea preparatory meetings in summer 1971, fishing spokesmen felt the U.S. delegation ignored their recommendations. As industry advisors to the delegation, they found, they were briefed about the negotiations but had no input. They were angry at the official U.S. statement on fisheries management. Fishing representatives and some parts of Congress, especially the House Committee on Merchant Marine and Fisheries, pressured the State Department to make fishermen part of the U.S. Law of the Sea delegation and to change the official U.S. negotiating position.[67]

By the beginning of the 1972 preparatory sessions, the fishing industry had won on both points. The new U.S. species approach sounded much like the proposals of the National Federation of Fishermen and other fishing organizations. The State Department agreed to include two fishing spokesmen as members of the delegation. Jake Dykstra of the Point Judith Fishermen's Cooperative represented the interests of coastal fishermen; August Felando of the American Tuna Boat Association spoke for the distant-water fishermen, parts of the tuna and shrimp fleets. Jake Dykstra said that as a delegate he could sit in on the negotiating sessions and had access to reports that could affect the fishing industry. His principal purpose, he said, was to make sure that nothing harmful happened to coastal fishing interests.[68]

By 1974 when the U.S. changed its position to favor 200-mile fisheries zones, many congressmen backed legislation to declare a 200-mile fisheries zone for the United States in response in large part to

pressures from fishing communities. They called State Department and Law of the Sea negotiators to justify their stands in hearing after hearing before the Committee on Merchant Marine and Fisheries in the House and the Committee on Commerce in the Senate. A U.S. Law of the Sea position that did not favor 200-mile fisheries jurisdiction would have been absurd in light of domestic opinion. The negotiators' major objective was not to stick to one negotiating position but rather to keep Congress from passing the 200-mile legislation before they reached accord at the Law of the Sea conference.

4. Failure of the Conference to Reach Agreement

However, the Conference on the Law of the Sea could not reach agreement. The sessions ended without consensus in 1974 and 1975, and the conferees planned to meet again in 1976. John Stevenson, head of the U.S. delegation to the Law of the Sea conference, and Thomas Clingan, chief of the fisheries negotiations, resigned after the 1975 sessions. John Norton Moore, chairman of the National Security Council Interagency Task Force on the Law of the Sea, spoke pessimistically for the first time. "I have indicated that there were reasonable prospects of adhering to the General Assembly schedule and completing the record of the Conference during 1975," Moore said. "I regret to report to you that I was wrong, and that this schedule was overly optimistic. It is now clear that the negotiations cannot be completed before mid-1976 at the earliest, and at this time it is not clear whether or not a treaty can be completed

during 1976." He would reevaluate his recommendations concerning interim fisheries legislation, he said. Congressmen heard these statements as a go-ahead for the extension of U.S. fishery jurisdiction even though Moore later rescinded his offer to cooperate in drafting legislation and returned, at Kissinger's order, congressmen said, to his earlier statement that Congress should pass no legislation before the conclusion of the Conference on the Law of the Sea.[69]

Several senators and representatives had observed the sessions at Caracas and Geneva and felt convinced that the conference could not reach a conclusion soon. Representative Robert Leggett, chairman of the subcommittee of the Committee on Merchant Marine and Fisheries which considered legislation on extension of fisheries jurisdiction, spoke for a majority when he said, "The Law of the Sea Conference is a worthy, necessary and desirable effort. . . . But it is very likely years away from conclusion when one considers we have not yet achieved agreement on a draft treaty, let alone obtained the requisite number of signatures, the sequential ratification and the various individual legislative actions necessary to implement any resulting international law agreements. Two years ago, we heard Ambassador Stevenson and Mr. Moore . . . urge Congress to defer its consideration of unilateral action on these fisheries issues until after the Caracas meetings because they felt . . . real progress would be made. It wasn't. Again, this year, we were told to be patient a little longer, for what Caracas failed to do,

Geneva would surely achieve. But it didn't. Now the State Department line is--wait till next year, in New York!"[70]

ICNAF agreements could fill the need for restraints on fishing in the northwest Atlantic until the Conference on the Law of the Sea concluded, State Department officials insisted. As ICNAF failed to constrain fishing, however, fewer legislators would listen to that argument. While the Law of the Sea conference dragged on, more of them became convinced that unilateral interim measures were crucial to control foreign fishing until the Law of the Sea conference ended.

The History of Unilateral Action

While the State Department emphasized the benefits of multilateral action in fisheries problems, U.S. unilateral claims regarding the fisheries of the northwest Atlantic after the arrival of the foreign fleets had almost as strong a tradition as international agreements. In most cases, however, the U.S. behavior was grounded in accepted international practice.

1. Excluding Foreigners from U.S. Territorial Waters

In 1964 Alaskan and Massachusetts fishing interests led the push to prohibit foreign fishing in U.S. territorial waters in order to reduce Soviet fishing operations and to keep the Russian vessels farther from the coast. The 1958 Conference on the Law of the Sea had recognized a coastal nation's control over fishing in its territorial seas in the Convention on the Territorial Seas and the Contiguous Zone. However, the

United States had no legislation which specifically forbade foreign fishing in the territorial seas or which prescribed penalties. "A naked prohibition is not much use as a deterrent to foreign fishing," wrote Captain C. R. Kear on behalf of the Secretary of the Navy. "In effect the Coast Guard can only say to the master of the offending ship: 'Please go away,'" Senator E. L. Bartlett of Alaska said. The bills passed in 1964 provided for confiscating of the fish and the boat and for fines and imprisonment for any person who fished in U. S. territorial waters without authorization. Whether or not the State Department allowed the Coast Guard to enforce the law, the number of complaints about foreign fishing vessels working within three miles decreased.[71]

2. Extension of Fishery Jurisdiction to Twelve Miles

Fishing interests from Alaska, the Pacific Northwest, and New England lobbied for extension of U. S. fishery jurisdiction to twelve miles in 1966 in order to push foreign fishermen farther away. New Bedford and Point Judith spokesmen represented the New England interests. The State Department had always opposed any extension of fishery jurisdiction but changed positions. "Since the 1960 Law of the Sea Conference there has been a trend toward the establishment of a 12-mile fisheries rule in international practice," a State Department representative stated. "Many states acting individually or in concert with other states have extended or are . . . extending their fisheries limits to 12 miles. . . . In view of the recent developments in international practice, action by the

United States . . . to establish an exclusive fisheries zone extending 9 miles beyond the territorial sea would not be contrary to international law." The legislation should allow traditional foreign fishing to continue and should make clear, the State Department emphasized, that the action did not affect the width of the territorial sea or traditional freedoms of overflight and nevigation. The law passed in late 1966 took account of all the points the State Department raised.[72]

A twelve-mile fishery zone was not what fishing interests or representatives from fishing districts would have wanted if they could have had their way. "We feel that both for the protection of the fishing industry and the preservation of the national interest, a limit of 200 miles is the most desirable," Howard Nickerson, director of the Harbor Development Commission in New Bedford, said. If not 200 miles of fishery jurisdiction, then the industry would like to see extension of fishery jurisdiction to at least fifty miles or to the 100 fathom depth curve, Nickerson said. Representatives from the West Coast expressed the same sentiments. Jake Dykstra of Point Judith, beginning his career in fishery politics, called for extension of fishery jurisdiction to 200 miles. "The proposed extent of the fishery zone is completely inadequate," he said. "A fishery zone of this extent would be ineffective to protect fishery stocks, most of which range the entire coastal shelf. Halfway measures and fractional advances are no answer to this problem." Dykstra supported twelve-mile limit legislation because it was all he could hope for, but he wrote, "Our greatest fear in twelve-mile limit

legislation has been that the Congress, upon passage of such law, might feel that the subject of fishery jurisdiction was then established for a long time to come."[73]

Neither the prohibition against foreign fishing in U.S. territorial waters nor the twelve-mile fishing limit had an effect on the problems of foreign fishing. They did not reduce foreign fishing pressures on the resource because the stocks of fish ranged across the fishery jurisdiction boundary. Fishing pressures outside the territorial waters or the twelve-mile limit were quite sufficient to deplete the fish stock as fast as if the foreigners had fished in the inshore waters also.

The legislation also attracted little political attention in New England. The laws preceded the broadening of concern about foreign fishing to large numbers of groups. The groundfish industry, later profoundly affected by the foreign boats, still concentrated on subsidy programs to help their product compete with less expensive imported fish.[74] The administration went along with the action. Perhaps, as Dykstra feared, the legislation relieved pressures for a 200-mile limit, but the pressures were very weak anyway. The most important effect of the legislation was that it established precedents for congressional intervention in the foreign fishing problems on the East Coast. Not until 1973, however, did Congress act to protect fishing from foreign pressures in opposition to the State Department's interests.

3. Designating Lobster a Creature of the Continental Shelf

In 1973 fishing interests and state fishery managers pressed Congress to pass a law which would add the lobster to the list of creatures of the continental shelf; that move would prohibit lobstering by foreigners under the Convention on the Continental Shelf. The Department of Commerce normally named species of the continental shelf. The previous year, however, the fisheries officials of twelve Atlantic coast states had petitioned Robert White, the chief of the National Oceanic and Atmospheric Administration, to declare the lobster a creature of the continental shelf. White had responded that he would not accept the recommendation but would seek to protect the lobster resource through multilateral agreements. State fishery officials were furious. They were attempting, with National Marine Fisheries Service cooperation, to design uniform management for the depleted inshore lobster resource. The NOAA decision placed them in the untenable political position of trying to impose severe restrictions on American lobstermen while foreign boats could move in to take all they wanted of the resource. Governor Francis Sargent of Massachusetts announced that his state would protect the offshore lobster resources by enforcing its own 200-mile limit, passed in 1971.[75]

State fishery managers and offshore lobstermen were certain, moreover, that if the foreign fleets decided to direct efforts towards the lobster stock, it would take years to slow the fishing activity through international negotiation and that by then the stock would be destroyed.

Legislation had to be in place to prevent that from happening.[76]

The NOAA position reflected the State Department view that agreements with other countries fishing on Georges Bank could solve problems of foreigners' incidental lobster catch, the only type of harvest the State Department acknowledged existed or would be important in the future. Shrimpers working off the coasts of Central and South America backed the State Department position because they feared that if lobster became a continental shelf specie, other countries might declare shrimp, with many of the same habits as lobster, a continental shelf specie also. The shrimp industry had worked since 1958 to assure that the Convention's definition of shelf species did not cover shrimp and that shrimp did not make the list of continental shelf species later. The State Department's statement on the legislation which Congress considered in 1973 used the shrimpers' opposition, "The Department believes that enactment of the proposed legislation will not give the lobster the protection it deserves, and will raise problems for other American fishermen and the United States which should be avoided. We believe that the bilateral agreement approach . . . will give the lobster the necessary protection, and that we should continue to pursue it."[77]

Congressmen recognized that by 1973 New England fishing interests had watched ineffectual efforts at bilateral settlement of foreign fishing problems for too long to be put off. As Representative William Cohen of Maine said, "The point of declaring the lobsters to be a creature of the shelf is . . . to give them [the fishermen] a sense of confidence that we

are really doing something to protect their interests." He told the State Department spokesman, Donald McKernan, "You see the patience of the members here being frayed quite thin, and because they are reflecting the impatience of the fishermen, they do not have that kind of patience any longer."[78]

The Senate attached the lobster bill to legislation to implement shrimping agreements off the coast of Brazil, which both the State Department and the shrimping interests wanted to see pass, in order to prevent a veto. The lobster therefore became an official creature of the continental shelf.

The legislation may have prevented some foreign fishermen from lobstering on Georges Bank, but it probably had almost no effect on incidental catches. Enforcement of the law, over which the State Department had control, was particularly mild. Under State Department orders, the Coast Guard and National Marine Fisheries Service officials who found foreign trawlers violating the prohibition, used none of the sanctions which U.S. legislation authorized. Many months after enactment of the law, John Norton Moore announced that the State Department would begin "tough, unprecedented enforcement." Shortly afterwards, however, when the Coast Guard observed a Canadian boat fishing directly for lobster, the State Department noted that "We had an obligation to sit down and talk with the Canadians before commencing a strict enforcement program."[79]

The legislation was important politically, however. It set a precedent for unilateral action on fisheries problems by Congress in defiance of State Department desires. That made contemplation somewhat easier of even more drastic unilateral action, the passage of legislation for extension of fisheries jurisdiction to 200 miles. The lobster legislation may have fueled the drive for a 200-mile limit among fishing interests because passage of that law demonstrated that Congress was the industry's ally against the State Department and against NOAA, which backed the State Department but sought management control over American fishermen. Congress reinforced their feeling by passing a concurrent resolution which stated, "It is the policy of the Congress that our fishing industry be afforded all support necessary to have it strengthened, and all steps taken to provide adequate protection for our coastal fisheries against excessive foreign fishing, and further that the Congress is fully prepared to act immediately to provide interim measures to conserve overfished stocks and to protect our domestic fishing industry."[80] The support of Congress encouraged fishing interests to work harder for the extension of jurisdiction.

The Fishery Conservation and Management Act

As the lobster legislation passed in late 1973, Congress began its first consideration of bills to extend fishery jurisdiction to 200 miles. In response to the opposition from the administration, Congress continued to study and revise legislation in 1974 and 1975 while prospects for an

early end to the Conference on the Law of the Sea dwindled and ICNAF regulations and multilateral agreements for other parts of the coast failed to solve the problems of the foreign fishing pressures. Support for extension of fishery jurisdiction grew. Among commercial and sport fishing groups, only distant-water tuna and shrimp interests opposed the bill. Large numbers of state and local officials backed the fishermen and pushed for the legislation. Newly formed marine conservation groups such as the National Coalition for Marine Conservation supported the bills along with the nationwide organizations of the conservation movement such as the Sierra Club, Friends of the Earth, and the National Wildlife Federation.

One hundred thirty-five members introduced or co-sponsored 200-mile limit bills in the House in January 1975. Robert Leggett, chairman of the House subcommittee overseeing the legislation, described the position of Congress to the Law of the Sea delegates as the 1975 Law of the Sea meetings ended. "I said, look, we have got pressures in the country. We have got our shores utterly being swept by foreign fishing vessels. Even middle America is concerned in Kansas. I noticed the editorials around the country. I said, we have got to move."[81]

Congress passed the Fishery Conservation and Management Act (FCMA) in April 1976. New England fishing interests finally had the 200-mile limit to restrict foreign fishing. Foreign nations could not fish

within 200 miles of the U.S. coast or for anadromous or continental shelf species beyond 200 miles except under special conditions.

1. Provision for Foreign Fishing

The FCMA differed considerably from the bills introduced during 1973, 1974, and 1975; and it did far more than exclude foreigners. Many of those early bills had used the language of the laws which prohibited foreign fishing in U.S. territorial waters and extended fishery jurisdiction to twelve miles. As William Mustard of the National Federation of Fishermen said, those bills were "of the 200-mile fence variety." U.S. coastal fishermen would have been happy to see such legislation enacted because the bills met fishing interests' desire to get rid of foreign fishermen. Other bills asserted jurisdiction over coastal and anadromous species and called for the negotiation of treaties with other countries on the use of the resource. The National Federation of Fishermen endorsed this approach, saying that it took account of many of the provisions of the U.S. draft treaty articles at the Conference on the Law of the Sea.[82]

The law passed in 1976 was far more elaborate than these earlier types of bills. The conditions under which foreign fishermen could operate within 200 miles of the coast were linked to management of domestic and foreign fishermen. Foreign fishermen would harvest that part of the "optimum yield" of a fishery which American fishermen lacked the capacity to catch. The U.S. would issue a permit to foreigners

which allowed a level of fishing that was consistent with a management plan for a specie or group of species. Before foreign fishermen could receive a permit, their country had to sign a governing international fishery agreement with the United States in which the foreign nation recognized the exclusive fishery management authority of the United States and agreed to follow regulations, to cooperate with U.S. enforcement, to pay fees, and to catch no more fish than its allocation.[83]

2. The Domestic Fishery Management Program

These conditions linked foreign fishing to the extensive system of management over U.S. fishermen which the FCMA established. The law set up eight regional fishery management councils to oversee the use of the fishery resources in different parts of the country. The New England Fishery Management Council controlled the use of the fish resources off New England outside the three miles of state jurisdiction; the area covered Georges Bank, the Gulf of Maine, and southern New England waters. The Council's members included the director of each state's marine fisheries agency, the regional director of the National Marine Fisheries Service, and eleven others "knowledgeable or experienced with regard to the management, conservation, or recreational or commercial harvest, of the fishery resources" of the region. Non-voting members came from the State Department, the Coast Guard, the Fish and Wildlife Service, and the Atlantic States Marine Fisheries Commission.[84]

The law directed the regional Fishery Management Council to prepare a management plan for each fishery in the region and to submit it to the Secretary of Commerce. In preparing a plan the Council decided on the optimum yield of a fish resource. Optimum yield, the law stated, "means that amount of fish--(A) which will provide the greatest overall benefit to the Nation, with particular reference to food production and recreational opportunities; and (B) which is prescribed as such on the basis of the maximum sustainable yield from such fishery, as modified by any relevant economic, social, or ecological factor." The Council, after determining the size of the optimum yield, regulated fishing activity so that the catch did not exceed optimum yield. The law authorized the Council to designate zones where fishermen could fish; to specify limits on catch in terms of weight, size of fish, species, and other factors; to prohibit or require certain kinds of equipment; to require permits for fishing; to set up a system of limited access to the fisheries; and to prescribe any other measures necessary for conservation and management.[85]

Seven "national standards" for fishery conservation and management were to guide the Council's decisions. Conservation and management measures should prevent overfishing while achieving the optimum yield from each fishery on a continuing basis. The Council should adopt measures based on the best scientific information available. The Council should manage an individual fish stock or interrelated stocks as a unit throughout their range. Conservation and management decisions should

not discriminate among residents of different states; and allocation of fishing privileges should be fair and equitable, promote conservation, and assure that no individual or group acquired an excessive share of privileges. The conservation and management efforts should promote efficiency in use of fishery resources. The efforts should take into account variations among fisheries, fishery resources, and catches. Conservation and management measures should minimize costs and avoid unnecessary duplication.[86]

3. The Forces That Put Domestic Management into the Act

Fishing interests had not aimed to establish management authority over the industry as they pushed for the 200-mile fisheries zone although they expressed willingness to consider it if foreigners were severely restricted. "It is our conviction that the fisheries of the United States are in need of more effective management and that it is vitally necessary that legislation be enacted to accomplish this," Jake Dykstra stated. However, such action was definitely of secondary importance, and understanding of how a management system should work was far too primitive to contemplate setting one up quickly. Extensive detailed management provisions in some bills "are included in haste, it seems," Dykstra said, "because some of their proponents feel that now, when the coastal fishermen are so desperate for extended jurisdiction, is the time to saddle them with all sorts of untried schemes to restrict their operations. . . . We heartily endorse the concept that comprehensive domestic

fisheries management legislation will have high priority once extended fisheries jurisdiction is a reality."[87]

Gayle Charles of the New England Fisheries Steering Committee agreed with Dykstra: "The first and vital step required to provide a foundation for a logical fisheries conservation and management plan in the best longterm interests of all those who fish on the U.S. Continental Shelf is to gain authority over U.S. coastal waters and fisheries. A New England fisheries policy and plan, a viable management regime, and regulatory measures with the participation and cooperation of those fishermen involved and affected could then be evolved quickly."

"Most sophisticated operators in the fisheries recognize at this point that management is needed," stated William Whipple, vice president of an offshore lobstering company. "At the same time, they recognize a very, very strong undercurrent of feeling among the people who actually do the fishing: They will not accept more regulations, any more restrictions, any more unequal enforcement procedures until two things happen: First, the foreigners are somehow controlled and, second, everybody is treated equally under whatever management mechanism is in effect." Even though industry representatives generally declared that they supported domestic fishery management, a National Marine Fisheries Service survey showed, they did not like the proposals they saw. They opposed every specific suggestion about how management might work.[88]

Although fishing industry leaders would have preferred to postpone the design of a management system, the forces that favored management

and conservation measures were strong enough to make such provisions critical for passage of any bill to reduce the number of foreigners in the coastal waters. Who those groups were and why they were so strong are hard to unravel because much negotiation took place off the public record. However, several groups pushed openly for management.

As congressmen authored the first 200-mile limit bills and debated making lobster a creature of the continental shelf in 1973, the National Marine Fisheries Service (NMFS) and the National Oceanic and Atmospheric Administration (NOAA) introduced a bill to manage domestic fishermen. The legislation would solve several problems, Robert White, administrator of NOAA, said. It would help to coordinate state management programs. "If we are ever to break out of the present confusion due to conflicts between regulations of different jurisdictions into an approach which is biologically, economically, and socially sound," White said, "we will need the kind of statutory base provided in this bill." The bill also would provide "the Federal Government with the authority necessary to discharge its obligations under our international fisheries agreements," White pointed out, and would implement the 1958 Convention on Fishing and Conservation of the Living Resources of the High Seas. Without such legislation, the United States had no authority to enforce the provisions of bilateral or multilateral negotiations on its own fishermen except in the ICNAF areas. Such agreements could solve the problem of foreign fishing, the State Department had declared, but not without U. S. enforcement authority over American fishermen.[89]

The NOAA/NMFS bill did not get out of committee because of the opposition from fishing interests and congressmen to a measure which controlled domestic fishermen without restrictions on foreigners and because of disagreement about the way management should work. In the next few years, however, NOAA continued to voice the administration's opposition to unilateral extension of fishery jurisdiction. As representative Gerry Studds of Massachusetts pointed out, "The only glimmer of enthusiasm on the part of the administration has to do with the possibility of management provisions in the legislation."[90] Establishing a system of management was certainly an important way to reduce the opposition from NOAA.

Provisions for conservation and management also undermined some of the arguments by the State Department representatives and other opponents of the 200-mile limit bills and, therefore, weakened the grounds for opposition from the administration and from congressmen on committees concerned with foreign affairs and the armed forces. International law, the State Department spokesmen said again and again, showed that unilateral extension of fishery jurisdiction to 200 miles was illegal. The International Court of Justice had ruled against Iceland in its efforts to keep fishing vessels from Great Britain out of a fifty-mile zone of fishery jurisdiction, and the court would surely not support the United States in a dispute with a foreign nation over rights inside a U.S. fishery zone. However, Professor Louis Henkin, an expert in international law from Columbia University, pointed out conditions under which

extension of fishery jurisdiction would be acceptable. "In my view . . . an impartial tribunal might well hold that, unlike assertions of exclusive fishing rights, bona-fide conservation measures applied to all (including fishing by the coastal state) is now within the authority of the coastal state under customary law," Henkin said. "A conservation regulation applicable to all fishing (including our own), moreover, accords with the policies pursued by the United States since the Truman Proclamation of 1945; a large, exclusive fishing zone, on the other hand, would be wholly contrary to the policies, and the view of international law, which the United States has consistently and repeatedly asserted." None of the nations that extension of U.S. fisheries jurisdiction would affect had objected to the principles of the Truman Proclamation[91] or rejected the conservation provisions of the Convention on Fishing and Conservation of the Living Resources of the High Seas, Henkin asserted. It seemed unlikely that they would now, but in any case, challenges to a "conservation measure applicable to all" would probably not be sustained under international law.[92]

Management and conservation clauses also made the 200-mile fisheries jurisdiction bills more consistent with the emerging consensus on coastal state rights over fisheries at the Conference on the Law of the Sea. By the end of the 1975 Geneva session of the Conference on the Law of the Sea, the negotiating texts on fisheries affirmed "sovereign rights" of coastal nations over fisheries to 200 miles. However, a coastal state had a duty to conserve the fish resource. This meant that

a nation had an obligation "to determine allowable catch and adopt other conservation measures 'designed to maintain or restore populations of harvested species at levels which can produce the maximum sustainable yield, as qualified by relevant environmental and economic factors'; to ensure 'that the maintenance of the living resources . . . is not endangered by over-exploitation'; and 'to take into consideration the effects on species associated with or dependent upon harvested species.'" The coastal state had first claim over the use of fish resources, but it also had to determine the capacity of its industry to harvest the resources in its zone and give other states the opportunity to harvest the share of allowable catch which its own fishermen could not use.[93] Warnings from the State and Defense Departments that unilateral extension of fishery jurisdiction would destroy possibility for agreement at the Conference on the Law of the Sea and would lead to claims by other countries that would harm U.S. interests seemed less plausible, congressmen argued, when the domestic legislation took the same action as that which the conference proposed.

Other groups favored the extension of fishery jurisdiction to 200 miles but also wanted to see provisions for fishery management. They believed that fishery management could lead to more rational use of the fish resources and a healthier, more stable fishing industry. The directors of state offices of marine fisheries favored such a program. Management of the use of fish and shellfish resources within three miles of the coast had already become an important role for state fishery

departments. In Maine, state officials had been working with lobstermen for years to adopt measures that would preserve the inshore lobster resource. As Congress debated the 200-mile limit, Massachusetts and Maine fisheries officials sought ways to protect the shrimp fishery from the very severe fishing pressures of inshore draggers. Spencer Apollonio, commissioner of the Maine Department of Sea and Shore Fisheries, gained greater authority from Maine's state legislature to manage the state's inshore fisheries in 1973. "The fisheries value of the Maine Coast could be doubled without too much trouble" with proper management, Apollonio declared.[94]

Eleven Atlantic coast states had met since early 1972 under the auspices of the State-Federal Fisheries Management Program established by NMFS. The purpose of the program was to make uniform fishery management easier by encouraging cooperation among states. While the state fishery administrators failed to agree on an effective uniform lobster management program, their first goal, their efforts called attention to the need for management authority outside the three-mile limit of state fishery jurisdiction where fishermen drew on the same stocks of fish as in the near-shore waters.[95]

State fishery officials made strong pleas for a fishery management program to accompany the restrictions on foreigners. "It would be ironic and immoral," Spencer Apollonio declared, "if, as the economic value of those resources reaches record highs, as the world's needs for protein sharply increase, and as the fisherman attains technologically efficient

and economical methods of harvesting the sea, we should continue to tolerate the continuation of the present inefficient, costly, and wasteful use of those high seas resources. . . . It is truly ironic that the present over-fishing practices do not produce the maximum amount of food. It is a fact that a properly managed renewable resource can realize a maximum sustainable yield in significant excess of the present landings for the long-term benefit of all." Frank Grice, director of the Division of Marine Fisheries in Massachusetts, declared, "I cannot bring myself to condone the senseless over-exploitation of a living, renewable resource without regard to the protein needs of future generations. . . . what we must have is management control: the right to regulate the catch so that no species is over-exploited and thus, pushed to the edge of extinction."[96]

The directors of the states' offices of marine fisheries often had degrees in fishery biology or oceanography. They had received their training from another group who spoke for fishery management but usually remained non-committal on extension of fishery jurisdiction, academic biologists and economists who specialized in fisheries research. Dr. Donald Horton, a fishery biologist and director of the Research Institute of the Gulf of Maine, stated, "I am quite sure that I would not be in favor of extending the national jurisdiction for any other purpose than for the protection and management of fishery resources." Professor Giulio Pontecorvo, an economist who had written numerous books and articles on fishery management, advised Congress on the issues they

confronted in establishing a system of fishery management. Dr. Francis Christy, an economist with Resources for the Future, worked with NOAA officials on fishery affairs and wrote extensively on the benefits of fishery management. His writings made the issues in setting up a system of fishery management comprehensible to non-economists and non-biologists. Professor James Crutchfield and colleagues at the University of Washington also wrote on the need for fishery management and advised policy makers.[97]

Academics advised congressmen and officials at NOAA as they drafted successive versions of the legislation. Exactly how much they contributed to a conviction among legislators that a fishery management plan should be part of the 200-mile limit bill is difficult to gauge. Two of the senators who supported fishery management programs most staunchly, Senator Ted Stevens of Alaska and Senator Warren Magnuson of Washington, came from areas of the country where fishery management had been important for many years and where academic voices received attention on fishery management issues. The report of the House Committee on Merchant Marine and Fisheries on the 200-mile limit bill used four paragraphs from a study by two University of Rhode Island economists to explain fisheries problems without management and to state that control of fishing effort was "critical to U.S. fisheries."[98]

Confronted with the necessity for fishery management provisions to assure passage of a 200-mile limit bill, fishing interests sought to influence the form of the management system. Early versions of bills

proposed centralized programs controlled by NOAA or Congress with input from fishery advisory groups from the Atlantic, the Gulf, and the Pacific coasts. Spokesmen for the fishing industry made many suggestions about how management should work, but their most consistent concern was to limit the power of NMFS and NOAA and to guarantee representation on any management body for the groups affected by regulation, the fishermen, boat owners, and processors. They sharply criticized NOAA and NMFS. Lucy Sloan of the National Federation of Fishermen declared, "It is ironic to note that a bureaucratic agency which has done virtually nothing to promote the best fisheries interests of the Nation, which apparently has no real practical knowledge of what is in the best interests of the several States, is now proposing to save the fishermen and the resources it has watched disappear." Sloan emphasized, "What we think is necessary for the protection of the domestic industry is a system of checks and balances on how the Administrator [of NOAA] can promulgate regulations."[99]

Fishing interests sought more control over management in other ways and weaker management authority in the law itself. For example, Sloan called for less detailed management provisions in the bill: "Many of the management provisions could be provided for in the process of promulgating regulations, a process in which industry should have significantly more input than this bill reflects."[100] This would also mean that management procedures would be subject to more interpretation and challenge than ones clearly spelled out in law.

The FCMA incorporated some of the suggestions of fishing interests and left other out, but it did provide for substantial industry representation on the regional councils. Eleven of the seventeen voting members on the New England Fishery Management Council could come from the industry. While that did not guarantee that industry rather than conservationists, consumer advocates, or fishery researchers would get those seats, and while sectors of the industry could disagree greatly on how management should work, it still made fishing industry control of the management likely.

The Legacy of the Campaign for the 200-Mile Limit[101]

As the 200-mile limit passed in early 1976 with great acclamation from congressmen and from coastal fishing interests, it ushered in a new era in fishery policy. For the first time, the United States asserted control over foreign fishing off its coasts and put a system of domestic fishery management in place. The years of work to limit foreign fishing and to extend fisheries jurisdiction to 200 miles had molded views among industry spokesmen, fishermen, and officials at NMFS and NOAA that promised to affect the industry and fishery policy in the new era.

Fishermen and their spokesmen disliked and distrusted NMFS and NOAA, the agencies responsible for working with the Fishery Management Council in implementing and enforcing management plans. Fishermen's opinions had formed under ICNAF management. NMFS scientists made

the fish stock assessments that showed the need for lower ICNAF quotas. While fishermen wanted conservation, they did not want it at their own expense. The fishermen hated the biologists, said a biologist from NMFS closely involved in the ICNAF work, because, "We gave the fish to the Russians." Although his explanation was too simple, it partly explained the antagonism. The enforcement agents under ICNAF also came from NMFS; they boarded the New England boats, checked the catch at the docks, and initiated procedures which took the fishermen into court and fined them. Fishermen bitterly resented the enforcement which they considered unfair; foreign fishermen did not get the same treatment, they believed.[102]

The spokesmen for fishermen disliked NMFS and NOAA for other reasons as well. While they reflected the views of their constituents on the penalties for fishermen under ICNAF, they also found the biologists' analyses useful as they pointed to the dire predictions about the condition of the fish stocks to support their push for unilateral extension of fishery jurisdiction. Their animosity came in large part from their feelings that at every turn in efforts to control the level of foreign fishing off the coast, fishing spokesmen received no support from NMFS or met agency opposition. NMFS had not contributed to influencing the State Department to take a more aggressive stance in ICNAF negotiations and to assure that foreign nations bore the brunt of quota reductions. Instead, the agency had watched the problems worsen, fishing spokesmen felt. Fishing industry representatives were angry, too, that NMFS and NOAA

had sought management control over U.S. fishermen but stuck to the administration's line opposing control over foreign fishing off the U.S. coast. As Congress considered what management provisions bills should include, fishing spokesmen again found opponents in NMFS and NOAA rather than allies. William Mustard of National Federation of Fishermen said, "Both the National Oceanic and Atmospheric Administration . . . and the National Marine Fisheries Service . . . are self-serving mechanisms which, under the present set-up, only serve to perpetuate themselves." The fishing industry had no advocacy agency in the executive branch of the government, he claimed. NMFS sought not only to control the management process but also to determine the kind of management appropriate, fishing spokesmen said. "Limited entry is neither the only way nor even the best way to manage a fishery, despite what the NMFS National Fisheries Plan says," Mustard protested.[103]

Fishing industry leaders criticized NMFS and NOAA and pointed repeatedly at "the academics and the bureaucrats" as threats to the fishing industry's welfare. Their statements in turn found a responsive chord in many fishermen. "Academics" for the most part meant fishery biologists, many of whom worked in National Marine Fisheries Service laboratories on studies of fish behavior and on the stock assessments that would be critical ingredients of the fishery management plans. Less commonly, the term referred as well to fishery economists, usually those affiliated with NMFS or NOAA, who favored limited entry programs for fishery management. "Bureaucrats" meant the NOAA and NMFS

employees in Washington and in the regional offices in Gloucester who would work closely with the Fishery Management Council. The bureaucrats, the fishing spokesmen felt, wanted to expand their own jobs and responsibilities without benefit to the industry. Such feelings in the fishermen and their representatives, justified or not, could not aid the transition to fishery management.

Fishermen and their spokesmen also had expectations about fishery management with implications for the way the system would work. Fishermen underestimated the importance of the fishery management program. Throughout the campaign for the 200-mile limit, they paid most attention to the restrictions on foreign fishing for several reasons. Detailed management provisions went into the bills late in the push for the 200-mile limit so for years discussion had focused on the foreigners. Restrictions on foreigners were also easier to grasp than lengthy debates on the subtleties of a fishery management program, and fishermen had little time to study the news from Washington. Fishery news, furthermore, understated the management aspects of the legislation, probably for many of the reasons that fishermen paid them so little attention. Many fishermen who were fully aware of the management provisions going into the law believed that once the foreigners were gone, there would be enough fish available to keep the fishery management program from affecting their work. The program might begin to touch them years later as the New England industry grew; such a distant prospect offered little cause for concern.

ICNAF management had failed, fishermen, fishing spokesmen, and NMFS officials agreed. The reasons for the failure had to do with determination of quotas and with ineffective enforcement.[104] The foreigners' behavior was at the root of these problems, many observers believed. While ICNAF's dilemmas offered a rich opportunity for learning about the pitfalls of certain styles of fishery management, few of the groups involved appeared to draw those lessons because they blamed the foreigners for the difficulties. ICNAF's problems, however, may have had as much to do with management strategy as with the foreign-domestic conflict. Failure to understand this on the part of fishermen and their spokesmen who would influence the management system and be affected by it meant domestic management would rerun many of the ICNAF battles. In part because of the industry's views and in part for other political reasons, the National Marine Fisheries Service, charged with writing interim fishery management plans while the Council began operations, started with the ICNAF management methods.

As the 200-mile limit legislation passed, New England groundfish fishermen saw a brighter future than ever before. With the foreigners excluded, the uncertainty which they had felt about their high incomes and the depleted fish stocks dissipated. The foreign pressures had devastated the fish resource. In contrast, New England fishermen, the fishermen and their spokesmen pointed out, used larger mesh, lacked technology for midwater trawling, and did not have the capacity which caused the damage to the stocks. Recovery of the groundfish stocks

became possible and, with that, the prosperity fishermen were experiencing seemed more likely to last. In larger numbers than ever before, fishermen and boat owners planned to build and buy new boats; and young people decided fishing offered a promising career. The 200-mile limit, the fishermen and their spokesmen felt, had solved the most important problems the industry faced; and they looked optimistically towards the next years.

CHAPTER 6

IMPLEMENTING FISHERY MANAGEMENT

In 1977 the Brancaleones, one of the most respected fishing families in Gloucester, planned the purchase of the family's third offshore trawler. Another son in the second generation would have his opportunity as a skipper. The Brancaleones had fished out of Gloucester since the 1920s. "One of the finest captains in Gloucester," another skipper said of Tom Brancaleone at a Council meeting. "If you've got a chance to go on the 'Joseph and Lucia,' you're crazy not to take it," a crewman stated. The two "Joseph and Lucia"'s, "II" and "III," provided some of the best sites in the Gloucester fleet.[1]

In fall 1977 Fred Leber, formerly an attorney for the Securities and Exchange Commission in Washington, D. C., took delivery of his new offshore trawler, the "Hattie Rose," in Gloucester. He and his wife did not want to live in Washington, Leber said, and he was not satisfied with his job at the S. E. C. On the other hand, "The [fishing] industry looked very prosperous and growing all the time." At first, Leber had problems with the operation of the boat because he did not know anything about fishing or about how to hire a good captain and crew to take the boat out. He eventually persuaded a good captain to take the boat for a few months to resolve the problems. "I never dreamed that it would be as hard as it is," Leber said.[2]

The Brancaleones' and Fred Leber's decisions offered two examples of developments widespread in the groundfish industry. As the Fishery Conservation and Management Act went into effect in March 1977, the New England groundfish industry saw a bright future. Hundreds of fishermen in Gloucester, Portland, and smaller Maine and Massachusetts ports planned to purchase new boats. Even though large numbers of young people turned to fishing, captains complained they could not find enough experienced, reliable crew. Even more new fishermen could find sites, they said. The passage of the law contributed to these trends, more in some fishermen's cases than in others. As Leber put it, "The 200 mile limit passage was crucial; otherwise, I wouldn't have had the nerve to get into the fishing industry."[3]

Few fishermen or boat owners publicly verbalized the optimism or the prosperity which they spoke of privately and which their behavior expressed. Such publicity could reduce their leverage with the Fishery Management Council and NMFS compared with other fishing groups, attract too many new outsiders into fishing, and draw the attention of the Internal Revenue Service. In addition, however, many felt that future prosperity was not yet assured. Spokesmen hedged the optimism. The industry would experience a boom in a few years, not right away, said Thomas Norris of Old Colony Trawling Corporation in Boston. Howard Nickerson, executive secretary of the New England Fisheries Steering Committee, said, "The true results [of the 200-mile limit] won't

be felt for three to five years, with proper enforcement and management of our fish stocks."[4]

Industry spokesmen, fishermen, and National Marine Fisheries Service officials agreed that what happened to the fishing industry depended on the implementation of the 200-mile limit legislation. Congress had intended that the FCMA promote a healthy, prosperous fishing industry along with the achievement of other goals. Fishermen, boat owners, and fresh fish processors in the groundfish industry believed that the law held that potential.

Excluding Foreigners from the Fishery Conservation Zone

Most important, in the opinion of those in the industry, the U S. had to enforce the law against foreign nations and exclude foreigners from the fishing grounds if the domestic fishing industry were to continue to prosper.

Enforcement of the FCMA Against Foreigners

As the 200-mile limit went into effect, fishermen and their spokesmen watched the enforcement procedures against foreigners. Events in the first months after the law took effect confirmed industry fears that predominance of foreign policy priorities could easily make the 200-mile limit meaningless.

In the first weeks after the law became effective, the Coast Guard, the agency charged with enforcing the law against foreigners in the fishery

conservation zone, boarded and released five Soviet vessels. In one instance, the Coast Guard officers found no violations. In at least two others, however, the Coast Guard recommended the seizure of the vessels, but the State Department refused to allow it. "The merits of the case were such that the methods of the issuing of a fine would be effective rather than a seizure," a State Department spokesman declared in one case. New England fishermen saw the effectiveness of the 200-mile limit undermined.[5]

The New England Fishery Management Council and leaders of fishery organizations lodged formal protests with congressional leaders about the interference of the State Department. In response, Senator Edward Kennedy and Congressman Gerry Studds from Massachusetts criticized the handling of the incidents. "The fishermen of our country . . . are concerned that . . . the Department of State will make recommendations which fail to fully enforce regulation of foreign fishermen as established in the international fishery agreements," Kennedy said. "Neither the spirit nor the letter of the law enacting the 200-mile zone gives the State Department the power to overrule the Coast Guard in questions of enforcement," Studds stated. Studds claimed the State Department prohibited the seizures "because someone in the National Security Council didn't know what the hell they were doing." Congressional leaders and fishermen charged that the Carter Administration downplayed the fishing violations to avoid jeopardizing delicate Soviet-U.S. negotiations on strategic arms limitation.[6]

Perhaps because of the scale of the political protest, the State Department finally agreed on April 10, 1977, to the seizure of a Russian trawler that had harvested large amounts of river herring, "a gross violation" of the regulation limiting harvest of the herring to one percent of all processed fish aboard, according to LCDR Thomas Nunes, the Coast Guard's chief of Maritime Law Enforcement for the region. The next day the Coast Guard seized the catch of a Soviet refrigerator ship. The Coast Guard brought the Trawler, "Taras Shevchenko," and the refrigerator ship, "Antanas Snechkus," into Boston. As a result of the findings of NMFS law enforcement agents, the government filed civil and criminal charges against the "Taras Shevchenko" and its captain, and the Coast Guard issued a civil citation against the "Antanas Snechkus."[7]

The seizures and the citations appeared to serve their purpose. The Soviet Ministry of Fisheries stated that fishing captains had received further instructions on fishing in U.S. coastal waters. The number of violations by foreign boats declined.[8]

In contrast to the frequent protests in the first weeks of the 200-mile limit, New England industry representatives did not complain about enforcement problems in such large numbers again until September 1977 when the Department of State interfered with the seizure of a Polish trawler, recommended by the Coast Guard, the National Marine Fisheries Service, and the Department of Justice. The New England Fishery Management Council issued a strong protest. "If the Congress had intended that foreign policy issues were an over-riding concern, it would not have

enacted the Fishery Conservation and Management Act," the Council's executive director, Spencer Apollonio, wrote to Secretary of State Cyrus Vance.[9]

The Polish trawler case notwithstanding, such incidents were rare after the April seizures. Coast Guard surveillance and NMFS observers on board the foreign boats identified few serious violations. Enforcement seemed thorough enough to assure that the Coast Guard or NMFS would spot flagrant violators, as they had in the first weeks of the 200-mile limit.

Fishermen, on the other hand, remained very suspicious of all foreign activity. They emphasized ways in which either enforcement or regulations might not be effective. For example, one fisherman, a member of the Council, voiced the suspicions of fishermen he represented concerning the activities of a Polish research vessel. Another fisherman told the Council that he had picked up a NMFS observer's remark to another observer at sea over CB radio. The observer exclaimed that the bycatch amounted to "more than we ever would have believed." Council members and representatives of the fishing industry expressed concern that the NMFS observer program might cover only 20 percent of the foreign boats in the zone and that implementation of the observer program, funded with fees from foreign vessels, lagged.[10]

For the most part, however, those in the fishing industry and on the Council gradually gained confidence that the government enforced the law against foreigners. They turned their attention to other matters. By early

1979 a Coast Guard report on enforcement and surveillance methods attracted almost no interest at the Council meeting.

Fishing Permits and Allocations of Fish for Foreigners

New England fishermen and others in the industry were not just concerned about enforcement of restrictions on foreign fishing; they also sought to influence the allocations of fish which foreigners received. The law stated that foreigners could harvest that share of the optimum yield which American fishermen lacked the capacity to catch. The New England Fishery Management Council reviewed foreign nations' requests for permits and recommended to the Secretary of Commerce that the requests be rejected or accepted. The Secretary approved or denied an application after consultation with the Secretary of State and the Secretary of the department from which the Coast Guard operated.[11]

Most Council members felt that as little fish as possible should go to the foreigners, but they believed that when they recommended that the Secretary of Commerce deny permits or reduce allocations, the Commerce and State Departments did not go along with their suggestions. In order to keep the State Department from "laughing at us," said Edward MacLeod, elected Council chairman, the Council had to set up stronger procedures for review of foreign permit requests. The Council needed to develop criteria based on information about the foreign vessels' fishing capabilities and violation records to support Council claims that permits should not be granted.

Fishermen and their representatives, in contrast, were incredulous and angry when the Council recommended approval of permits for several foreign countries based on new criteria and deferred decisions on other permits to obtain better information. "The purpose of the 200-mile limit is conservation, but then what we don't catch goes to the foreigners," said a Gloucester fisherman's wife. "Some of our boats could go for those fish, but we know we need it next year. We shouldn't give it away." "Cod eat squid," a Portland fisherman told the Council. The Council ought to "take care of our own rather than them." "Why take fish out of our mouths to feed them?" a Gloucester fisherman asked. "We should fill our stomachs first." Alan Guimond of the Offshore Fish and Lobster Association urged the Council to consider foreigners' violations of fishing regulations before approving new permits. Guimond and a few others lobbied the State Department on these issues as well and persuaded Commerce Department officials to modify preliminary management plans in a few cases to favor American fishermen more.[12]

The worst conflicts over foreign allocations in the first few years of the FCMA had to do with the preliminary management plan for herring. The problems reflected the tension between foreign policy concerns and the interests of the domestic fishing industry, the strength of fishing industry hostility towards the foreigners, and the importance of vigilance on the part of the fishing industry to assure that conditions on foreign fishing specified in the FCMA were fulfilled. NMFS used biological evidence to support a sizable allocation of herring to foreigners on Georges

Bank in 1977. New England fishermen, processors, and boat owners, providing alternative economic information on the capacity of the domestic industry and pointing to other biological findings, insisted that foreigners should not have received any allowance of herring. The State of Maine sued the federal government in an effort to change the allocations. Maine lost the suit, but the court required the Secretary of Commerce to provide more information on the calculation of the size of the surplus optimum yield and on how allocation of the fish to foreigners would benefit the United States. The reply from the Secretary of Commerce justified the size of the foreigners' share primarily on diplomatic and political grounds, not the kind of considerations which the FCMA detailed.[13]

The size of the foreign herring allocation stood, but the vessels that received permits were unable to harvest their share of herring in the time provided. The nations involved appealed to the Secretary of Commerce for another opportunity to catch the allocation of fish. France threatened retaliation against U.S. shrimpers off French Guiana unless the herring season were extended, and representatives of the shrimp industry appealed to the Commerce and State Departments to approve the changes. The Secretary of Commerce agreed to the foreigners' requests over the strong objections of the New England Fishery Management Council and the representatives of the herring and sardine industries.[14]

Problems like those with the herring allocation did not recur in the first years of the FCMA. Foreign fishermen received no shares of the most valuable, badly depleted species. New England fishermen had not

expanded into harvest of underutilized species enough to find the foreign allocations a constraint on their activities. The goals of the FCMA in controlling foreign fishing in the U.S. coastal waters seemed successfully achieved.

The potential remained for tremendous conflict over foreign fishing, however, as the 1977 enforcement, permit, and herring allocation problems suggested. If fish stocks grew through domestic management, the resource would become more attractive to distant-water fishing nations. Those nations might increase pressures on the State Department and, therefore, on the Secretary of Commerce and on the Coast Guard to raise foreign allocations or to ignore violations of fishery regulations. Even if other nations did not renew their interest in the traditional species, as New England fishermen expanded their harvest of underutilized species such as squid with encouragement from NMFS, foreign allocations of those species would gradually have to decrease. However, foreign nations would probably protest the reduction in their allotted catch and would find support for their complaints from the State Department. Although the Commerce Department had launched fisheries development programs for underutilized species by 1979, Commerce Department officials had always backed State Department positions in conflicts with domestic fishing interests just as they had in the herring allocation dispute; they would probably continue to support the State Department in the future.

Fishermen, boat owners, and processors remained unrelentingly hostile towards foreign fishing. With only a few exceptions they viewed

every foreign request and all foreign fishing activity with suspicion. They could see no reason why foreigners should receive any share of fish resources off the U.S. coast.

Council members, for the most part representatives of the industry, became somewhat more tolerant of foreign fishing requests because of their constant involvement with the permit and enforcement processes. Their constituents did not learn with them, however; and Council members would have to respond to constituent protests with a forceful display of opposition to foreign fishing if any disputes drew public attention.

In addition, the Council members understandably felt particularly protective of the responsibilities the law gave them, and they had protested angrily when officials of the State Department and, more commonly, NOAA and NMFS had tried to undercut Council authority several times in the first years of the FCMA. Allocation of fish to foreigners would involve overriding the Council's fishery management plans. The law allowed the Secretary of Commerce to do so, but the Council could be expected to battle such infringement of its management powers.

Some believed confrontations would be inevitable which would pull Congress and the courts into fishery disputes where foreign nations' interests, the State Department, and the Commerce Department were pitted against the fishing industry and the Fishery Management Council. A few considerations offered some reason for believing, however, that the conflicts might not be as severe as problems in the early years of the FCMA and the positions of the interest groups suggested. The longer the

conflicts were postponed, the stronger the international legal precedents that weakened the State Department's hand in acting for the foreigners. Foreign nations had recognized the United States' right to control coastal resources in the "governing international fishery agreements." The Law of the Sea conference continued to affirm the rights of nations to manage the use of coastal resources.

Council authority might become more firmly established, too. As time passed, the Council could extend management plans to cover more fisheries so that NMFS no longer wrote preliminary management plans. That would reduce NMFS's opportunities to build a case to fit foreign nations' desires. If the Council had enough time to operate before such confrontations developed, it might have accumulated years of recognized authority over the management process and might have acquired the expertise and political backing to present stronger opposition to efforts by the State Department to take away its decision-making power.

Few of these considerations about foreign-domestic fishing conflicts held the attention of Council members or the fishing industry after the first months of disputes under the FCMA, however. Foreign fishing issues presented few problems compared to domestic management of the New England fishing industry. The dilemmas of domestic fishery management absorbed the attention and energy of the Council members. Furthermore, fishermen, boat owners, and processors quickly realized that their prosperity and their way of life as well depended not so much on what happened to foreign fishing as on how management regulations worked.

Industry members became particularly disillusioned. By the end of the first year of the FCMA, fishermen and others frequently exclaimed, "We were better off with the Russians!" The greatest controversies and the largest share of the Council's work in the first years of the FCMA centered on the management plan which covered most of the groundfish industry.

Management of the Groundfish Industry Under the FCMA[15]

When the FCMA went into effect, the Council had been functioning for six months. The Secretary of Commerce had appointed Council members from the lists of candidates the governors submitted. The Council had hired a staff and installed it in offices. Congress had appropriated funds to make possible the Council's work of managing the use of the fish resources. The Council had spent its time from September to March working out administrative problems and had depended on NMFS to prepare the preliminary management plans for fisheries in which foreigners would participate.[16] By March, however, the Council was ready to begin its most important work of domestic fishery management.

Formulating the Groundfish Management Plan

A few months before the 200-mile limit went into effect, William Gordon, the regional director of NMFS, offered the Council a management plan for "groundfish"--haddock, cod, and yellowtail flounder. The Council should vote the plan into place immediately, Gordon emphasized to the

Council. When the United States resigned from the International Commission for the Northwest Atlantic Fisheries (ICNAF) at the end of 1976, no regulations covered the harvesting of groundfish. It was crucial that a management plan protect the groundfish fishery, most severely devastated by the heavy fishing of the late 1960s and early 1970s and especially important to large numbers of domestic fishermen. The Council adopted the plan with few revisions and sent it to public hearings by February 1977. The plan went into effect by emergency regulation in mid-March to avoid the months' delays of the conventional implementation process.[17]

The authors of the groundfish management plan aimed to meet the requirements of the FCMA which stated that a plan had to specify the conservation and management measures governing fishing by foreign and domestic vessels; describe the industry harvesting the species; assess the present and future maximum sustainable yield, optimum yield, and capacity of U.S. fishermen to harvest the optimum yield; and specify the data to be submitted to the Secretary of Commerce for managing the fishery. The writers of the plan sought to meet the requirements of the National Environmental Protection Act as well; the plan was part of a "final environmental impact statement for the implementation of a fishery management plan."[18]

The result was a document any planner would find strange. The plan specified no goals, although one major implicit goal emerged from it. The management of the fishery resources should aim to rebuild or to

stabilize the fish stocks while attempting to avoid "undue economic hardship" for the fishing industry and the coastal communities that depended on fishing. The law had dictated this goal; conservation and management provisions were to prevent overfishing while taking account of economic, social, and ecological factors. The Council agreed upon this purpose with very little discussion as they considered the size of optimum yields for the three species in the plan.[19]

The Council could reach agreement at least in part because the plan only defined certain aspects of the goal. Each Council member could form his own impression of what the goal meant. Specific terms, in contrast, might have stirred opposition and debate. The plan mentioned "undue economic hardship" for the industry and coastal communities and "adverse economic impacts" on the fishing industry but never said what these were. The plan did not examine how economic losses should be traded off against stock rebuilding aims.

Furthermore, the parts of the goal which the plan did spell out, the biological assessments of stock condition and the schedule for rebuilding, did not receive sufficient Council discussion and agreement. The biologists presented their information to the Council with considerable certainty, probably suggesting more confidence in their figures than they themselves felt, despite the fact that stock size assessments had a wide margin of error particularly for recent year classes and the relation between spawning stock size and size of a new year class was virtually unknown.[20] Both pieces of information were critical, however, in predicting the speed

with which a fish stock could grow. Many Council members did not believe the biologists' assessments and thought the fish stocks were in better condition, as fishermen insisted, but they felt they had to accept the assessments because the FCMA stated that the plans had to draw on the best scientific information available. Few Council members felt any commitment to the numbers in the plan.

The plan looked cursorily at alternative measures for achieving goals in order to satisfy the NEPA requirements, but these were only minor variations of the management measures selected. The plan did not compare alternative ways to achieve the aims or show that the route chosen was the best for reaching the goals. The plan did not offer any convincing demonstration that the measures selected would achieve the purposes of the plan at all.[21] Such exercises would have been nearly impossible, however, as long as the goals remained so vague.

The management measures selected for the groundfish fishery offered little basis for optimism about the results of management during the years to follow. The management regulations came directly from ICNAF; even the numbers of pounds allowed as by catches were the same. The ICNAF experience should have suggested good reasons to try other measures because ICNAF had failed to regulate the use of the fish stocks. Perhaps the Council attributed the failure of the ICNAF efforts to the intractability of the foreigners rather than to flaws in the management approaches themselves. Perhaps NMFS and the Council did not have the political strength to propose new measures when old ones, already

debated many times, might be accepted more easily. In any case, neither the Council nor NMFS seemed to have sufficient time or knowledge to attempt new approaches.

The flaws in the plan and the speed with which it was implemented reflect another major implicit goal: to put a plan, any plan, in place as fast as possible. NMFS officials, fearing the results of a long period of unrestricted fishing on the depleted groundfish stocks, pressed the Council to adopt a plan. The lack of time left the Council little chance to understand or debate the draft plan which NMFS handed them, but they seemed to agree that the groundfish industry had to come under some controls as quickly as possible.

Because of the problems with the plan and with the style of Council planning, Council members lacked a clear idea of what implementation procedures should aim for when crises arose later. Definitions of goals could shift with the political situation. The interpretation of goals could change, too, even if the general statement of optimum yield remained the same. Furthermore, the Council had no commitment to the measure spelled out in the plan. Therefore, when those in the groundfish industry challenged the measures, Council members could have difficulty supporting them and generally might not do so. The groundfish management plan was an inauspicious start to a process that promised to be extremely difficult even with the best of plans.

As a result of the plan formulation, in September 1977 when the Council began its second year of operation, the Council had in place a set

of specific measures that governed the groundfish industry's activity and would mold the crises of the year that followed. Central to the groundfish management plan were quotas and landing restrictions for cod, haddock, and yellowtail flounder. The plan set "quotas" based on the optimum yield figures for the catch of the different stocks of fish--cod and haddock in the Gulf of Maine and on Georges Bank and yellowtail flounder east and west of 69 degrees west longitude. These were the total amounts of fish which fishermen could harvest for 1977 and in the case of the yellowtail flounder east of 69 degrees for each three-month quarter. For haddock and one stock of yellowtail flounder optimum yields were so low that the quotas could be taken as "bycatch" in other "directed" fisheries. In other words, when fishermen sought cod, they would almost always catch haddock as well even if they did not intend to do so. Haddock caught in that way would fill the quota. Therefore, no fisherman was to fish intentionally for haddock or for yellowtail west of 69 degrees. The plan specified the allowable bycatch. No vessel could land more than 5510 pounds of yellowtail or 10 percent of the total catch on board, whichever was greater, in a given trip from the waters west of 69 degrees. No vessel could land more than 5510 pounds of haddock or 10 percent of the total catch on board with a few exceptions until 80 percent of the total allowable haddock bycatch was harvested. Although yellowtail east of 69 degrees was a directed fishery, no vessel could land more than 5000 pounds of yellowtail flounder per man per trip up to a total vessel trip limit of 25,000 pounds. When the harvest plus the estimated

prospective catch of cod and of yellowtail flounder east of 69 degrees equalled 100 percent of the quota for the species for the year, the "directed" fishery for the species would end. Then fishermen could not land more than 5510 pounds of each restricted specie or 10 percent by weight of all fish on board whichever was greater. When the total catch and estimated bycatch for the remainder of the year for haddock and for yellowtail flounder west of 69 degrees reached 80 percent of the quota for the year, the Secretary of Commerce could reduce the authorized landing restrictions below 5510 pounds per trip to keep fishermen from exceeding the quota. This last provision made complete "closure" of the fisheries possible. The Secretary could reduce the allowable bycatch to zero so that no cod, haddock, or yellowtail flounder could be harvested or landed legally.[22]

These regulations on catch formed the core of the management provisions, but the plan included other rules as well. Boats fishing for groundfish could not use mesh smaller than a given diameter when fishing in certain areas. During the spawning season, March, April, and May, fishing with bottom trawl gear would be prohibited in some areas. The plan recommended minimum sizes for haddock and cod which would mean that fish less than two years old would be landed less frequently; a boat could have 10 percent of total catch which was less than the minimum size.[23]

In September 1977, a handful of new members joined those on the Council who had completed a year of work. The members' interests would determine many of the ways the Council responded to its task of

managing the groundfish industry. Among the voting members on the Council were the regional director of NMFS; five state officials, one from each New England state, except Vermont; three representatives of commercial fishermen, one of whom worked as a fisherman; one vessel owner-processor; a spokesman for a company that owned large vessels; a recreational fisherman who published a sportfishing magazine; and a former state fishery official who did some recreational fishing. Of the industry members, seven depended on groundfish species in their work or represented groups who did. These seven included the head of a Rhode Island fishermen's cooperative, a New Hampshire fisherman, a sports fisherman, a spokesman for a company that owned large trawlers in Boston, the secretary-treasurer of the fishermen's union in New Bedford, the head of a vessel-owning and processing company in Maine, and a spokesman for general Rhode Island fishing interests. Some of the industry representatives were the political spokesmen for their groups; others had never participated in groundfish work politically except to speak occasionally for the concerns of their own businesses. One, Jacob Dykstra, had been active in national and international fishery politics for over a decade and had been instrumental in formulating the management provisions of the FCMA. Others had served as ICNAF advisers.[24]

The First Management Crises

By July 1977, only four months into the plan, fishermen had caught enough cod in the Gulf of Maine to close the directed fishery for 1977.

By the third week of August they had caught enough cod on Georges Bank and southern New England to close that directed fishery also. The Council met in the first week of September to discuss ways to relieve the economic hardships of the restricted fishery. Larger boats could not make a living if they could bring in only 5510 pounds of cod per trip, fishermen told the Council. In response, the Council asked the Secretary of Commerce to make emergency changes in the regulations to allow different amounts of bycatch for three groups of vessels and for boats that used fixed gear. Large boats, over 125 gross tons, could bring in the most cod per fishing day; and boats 50 to 125 gross tons could harvest more than small boats, those under 50 gross tons, for each fishing day. Boats in the large and medium classes would be better off than before. The changes meant the Council also had to ask for an increase in the optimum yield for 1977 because fishermen would greatly exceed the optimum yield stated in the plan under the new measures. The Secretary approved the plan in the first week of November. Until then, the 5510 pounds per trip limit remained in place.

1. Effects of the Plan on Fishing Levels

Under either plan, the 5510 pounds or the vessel size trip allowances, the Council faced serious problems of fishery management. They realized these during Council debate and as NMFS implemented the regulations. Fishery management was not rebuilding or stabilizing the fish stocks.

According to all biologists' estimates of appropriate fishing levels, fishermen were overfishing the resources.

The Council's management approach resulted in overfishing for several reasons. The quota system encouraged fishermen to catch fish as fast as possible. When they exhausted the quota and faced restrictions, fishermen protested the financial losses which they expected from the fishing reductions. As the September crisis showed, their protests persuaded the Council and Washington fishery officials to increase the quotas and to ease the restrictions so that the eventual catch was far above the original optimum yield.

The catch exceeded optimum yield for other reasons as well. Even if the Council and Secretary of Commerce had not raised optimum yield, fishermen would have overfished the resources. Fishermen learned quickly that they could land more fish than the regulations allowed without being caught. According to a Gloucester fisherman's wife who helped represent Gloucester interests at the Council meetings, only 20 percent of Gloucester skippers were obeying the regulations as of October 1977. NMFS could not enforce the management measures. The small number of NMFS enforcement officers could not patrol the unloading of every boat each day. The new regulations specified catch allowances in pounds per day of fishing, but NMFS could not possibly monitor the number of days each boat had been gone in order to determine whether the landings were within the required limits. Furthermore, many boats began to unload at night when most enforcement officers were off duty.

Some boats landed their catch, sometimes just the illegal share, in ports with less enforcement before proceeding to their home ports. Processors handled illegal catches as "mixed" fish or renamed the cod or haddock landings "pollock," a lower value, more plentiful groundfish. Once the fish left the boat, no enforcement officer could tell for certain whether the catches had exceeded the limits or who had landed the fish.[25]

On the few occasions when law enforcement officers cited fishermen for violations, fishermen found, the fines might never be levied. The administrative procedures for processing the violations took months. NMFS and Council warnings that larger catches in 1977 would mean a smaller quota next year had little effect on the violators. They profited considerably from the excess catches, but all fishermen would share those future deductions from the quotas if they ever occurred.

Fishermen found loopholes in the regulations that allowed them to catch more than the Council had presumably intended. For example, under the emergency regulations boats found they could catch three days' allowance of fish rather than one day's in one day of fishing by leaving the dock at 11:59 p.m. one day, fishing the next, and returning to port at 12:01 a.m. the third day.

Fishermen easily harvested more than the allowed bycatch. If they obeyed the law, as many still did in 1977, they had to throw the surplus catch overboard although it was already dead. Fishermen testified that they also caught thousands of pounds of fish which were too small to sell. As one Gloucester captain claimed, "Each big boat is killing scrod," 100,000

pounds per week. In an attempt to prevent such waste, to encourage fishermen to try not to catch the young fish, and to get an idea of the mortality rates in the youngest year classes, the Council asked the Secretary of Commerce to adopt a "no discards" rule which meant that all groundfish caught had to be landed. As the Coast Guard representative on the Council pointed out, such a rule was completely unenforceable because it required capacity and technology for surveillance at sea that the Coast Guard did not have. The Secretary of Commerce rejected the request.

A major reason fishermen caught more than the allowable bycatch was that the fish really were not bycatch. Fishermen continued to direct their efforts towards groundfish rather than other species. Their complaints at Council meetings reflected the fact that they were calculating their losses based on fishing principally for cod. "Our main line is cod," the owner of a large boat told the Council. "We can't survive on so little." He needed between fifty and sixty thousand pounds of fish per trip, he said. Small boats needed the 5510 pounds "to work to," one fishermen's representative said to the Council. Rather than switch to other fisheries as they might have done with a fall in prices of the groundfish, fishermen pressed the Council for more leeway in the directed fishery and continued to seek cod, haddock, and yellowtail flounder.

Council deliberations gave the impression that many on the Council were concerned about the overfishing but that they were far more disturbed about the disruption the management procedures caused fishermen. Their views on some conditions that led to overfishing, such as gaps in

enforcement, appeared to have more to do with fishermen's complaints than with the effects on the fish stocks.

2. Fishermen's Criticism of Management

In contrast to the effects of management on fishing levels, the Council's actions seemed to do little harm to fishermen's incomes. Nevertheless, fishermen throughout New England who fished for groundfish disliked fishery management and opposed the management measures. Many fishermen, accepting at least in part the scientists' arguments on conditions of the stocks, stated that the industry needed controls for a while; but the controls they favored were minimal mesh and hook size regulation. Expressing this view, a Chatham fisherman wrote, "Economic influences, such as supply and demand, pretty much told the fishermen which way to go to try and get their next trip. . . . A balance of groundfish stocks can still be roughly maintained in this manner, provided certain measures of conservation are practiced by all fishermen."[26] "If we use big mesh now," a New Bedford fisherman told the Council, "all the fish we would catch would be marketable and we wouldn't catch more than the quota." A large number of others felt that even such minor measures were unnecessary. The fishing grounds were "overstocked right now because 300 foreigners are not there," a Gloucester captain insisted. The scientists' figures were a "bunch of baloney." Another Gloucester captain told the Council he had spent forty-nine years fishing, thirty-five as a captain, "trying to figure out what fish do all the time." As a result,

he said, he was convinced "all the conservation needed was to get rid of the [foreign] midwater trawls."

The Council found the opposition from fishermen its principal problem in the first months of management under both the 5510 rule and the vessel class allowances. Fishermen opposed these specific Council actions on several grounds. First, the Council's measures threatened their livelihoods. While each Council member was well informed about his own small sector of the industry, no one either on the Council or off knew how all parts of the industry operated or to what extent they depended on groundfish. Data existed only for the landings of the large boats in the major ports, not representative of most of the participants in the industry. Therefore, the Council could make decisions that affected groups differently and put some people out of business. Council members were most likely to make sure that their own groups did not suffer if only because they knew what conditions would hurt them. After the low prices and glut of fish during the summer and the much higher prices that accompanied the restrictions on catch after the beginning of September, fishermen said NMFS should have warned them that they would be "shut off for the rest of the year." Could the catch be "smoothed out?" one fisherman asked, so that prices and incomes would be more stable and perhaps higher overall. When the Council did nothing to try to solve the glut-shortage problems, a Gloucester captain protested, "That's not conservation or nothing . . . we'll have a few big trips and then no more haddock."[27]

Just as frequently, however, fishermen protested the management measures for other reasons than the threat to their incomes. They complained that the management measures and their implementation were inequitable. In fishing, based so firmly on a strong sense of competition, such conditions were extremely unpalatable. A spokesman from Gloucester emphasized the importance of this, "The Council should give a quota and regulations, but let them be fair." None of the Council's measures were fair, however.

Fishermen were not equal in the race to catch the quotas. Smaller boats could not fish during bad weather and could not travel far to reach the fish. Fishermen foresaw that big boats could take the entire quota in the first few months of 1978 before the cod came inshore and winter weather moderated. Among smaller boats, Massachusetts fishermen would get a chance at the cod before Maine fishermen because the fish appeared along the Massachusetts coast earlier in the year. Typical of smaller boats' protests, a Chatham fisherman said, "Because of the dogfish" which ate cod off their hooks "and the weather, we didn't catch much for half the year. We didn't catch our share of the quota." The leader of the Massachusetts inshore draggers explained that inshore fishermen "can't catch cod early in the year. We need the full year to make an average year pay."

Catch allowances after the directed fishery ended were inequitable, too. The 5510 rule gave an advantage to smaller boats. 5510 pounds of cod would provide a profitable trip for one day for a small boat. For a

large boat, the same amount was very little from a trip that lasted several days. Vessel class allowances disturbed the small boat fishermen. The breakdown by boat size was "unfair because it gives most income to a few boats only--the big ones," a Point Judith fisherman told the Council. "It's unfair to have the large vessels take the most fish," reiterated the spokesman for the Cape Cod Fishermen's Coalition. Within each vessel class some boats had more advantages than others. Boats which were large for their vessel class were worse off than the smaller vessels in the next larger vessel group which received a bigger allowance of fish per day. As a result, captains disputed the Council's decisions about dividing points between vessel classes. "Larger boats have no more expenses than I have," one Gloucester captain protested, "so they should not get more fish." To base catch allocations on a boat's gross tonnage at all was unfair, Gloucester people stated, rather than to consider costs and whether a boat fished offshore.[28]

Enforcement problems aroused perhaps the greatest rage about inequities in fishery management. Fishermen who obeyed the regulations were furious that others were getting away with harvesting too much fish. "It's a fact that people may kill each other on the wharf!" a Gloucester fisherman's wife warned in October. Another fisherman pushed for penalties for the violators. "We're talking about a pie. Why should you divide a pie equally when one has his belly full today?" "They're trying to support their families," a captain said in support of the violators, "and you're acting like they're criminals, like they robbed

a bank." Two months later when for a short period NMFS levied heavy fines for the violations they had detected, non-violators were jubilant. "You laughed at me," said one Gloucester captain. "Now I'm laughing at you."[29] The violators raged at the size of the fines, the fact that they had been caught but others had not, that some ports had less enforcement activity than their own.

As the Council and those in the industry were gradually learning, no management measure and no enforcement procedures treated everyone equally, but they continued to look for ways that would offer more equitable solutions. As a result of the fall experience, Dan Arnold of the Massachusetts Inshore Draggermen's Association and Jay Lanzillo of Cape Cod Commercial Fishermen's Coalition offered a management plan which "would recognize all the New England fisheries needs."[30] The groups supported "the goal of the New England Regional Fishery Management Council to design a groundfish management plan which is equitable to all those involved in the New England fishery."[31] Gloucester fishermen supported a per man per trip catch allowance which they said would provide for a reasonable catch and an equitable arrangement, a "share" for every fisherman.

Fishermen's strong dislike of management came from more than the possible economic troubles and inequitable treatment. Small boat fishermen particularly resented any government intervention in their work on ideological grounds. As a Chatham fisherman phrased it, fishermen "hope a different type of thinking will emerge before a great

stronghold of free enterprise is buried under federal control." "This government is supposed to be a democracy, not communist," a Gloucester fisherman said.[32]

Fishermen resented the actions of the Council, but their anger and suspicion at government regulation intensified in the months after the Council requested changes in vessel class trip allowances. The Secretary of Commerce did not respond to the Council's September request for new bycatch allowances until the beginning of November and then approved parts of the request with several arbitrary changes. No one on the Council or in the industry could figure out who had made the changes or why, but both the Council members and the fishermen came away from meetings with NMFS and NOAA directors convinced that NMFS officials in the regional office and Washington were trying to undermine the Council and take over fishery management. As Dan Arnold said, "To this observer, the constant stream of regulations coming from Washington seem to have one common purpose: CONTROL OF THE FISHERMEN. Future plans these people have, such as individual boat quotas, stock certificates, limited entry, etc. will merely tighten the bureaucratic grip on us all."[33] Fishermen felt that the Council with its large proportion of industry representation at least promised them some say over measures that would affect their work and incomes. The National Marine Fisheries Service, in contrast, they felt, with its history as industry adversary in ICNAF and in the campaign for the 200-mile limit would remove management from any industry influence in order to build up its own power.[34]

3. Reasons for the Council's Responsiveness to Industry Protest

Fishermen were correct in believing that the Council would be more sensitive than NMFS to their protests and complaints. During the fall 1977 management crises, most of the Council members tried to avoid causing hardship to the industry even if that might mean high loss of fish stocks. As Council proceedings suggested, many Council members' implicit goals evolved into different emphases than the management plan had implied. The Council aimed to avoid hurting those in the fishing industry either economically or through disruption of life style and to try to preserve enough of the fish resources so that fishermen would not suffer because of lack of fish later. At the same time, they wanted to make sure that their actions for relief of economic and social problems would not give NMFS and NOAA grounds for interfering in the management process. Ideally, many would have liked to return to some of the conservation and stock rebuilding goals of the FCMA, but the sacrifices of that course were unbearable. Fishermen's discontent brought the Council to these positions. Opinion in the industry had a strong influence on Council members' decisions for a number of reasons.

Quite apart from political considerations, Council members felt great concern about the economic hardships and the social disruption they might cause. They did not want to deprive fishermen and their families of work and income or to destroy a way of life and a style of work. They sympathized acutely with the problems of those in the industry and with their alarm over management. Off-the-record conversations among members

of the Council showed quite a few agonized for humanitarian reasons over their choices and the harm they might cause.

Council members identified with the fishermen's troubles to some extent because they themselves faced hardships either from other fishery management efforts or from groundfish decisions. In Council deliberations they often reported the losses they themselves expected to bear, and some pushed hard for measures that would protect their own businesses and those of others like them.

Political considerations made the Council members responsive, too. Some members were the leaders of fishery organizations; if they alienated their constituents because of their actions on the Council, they could lose their jobs as heads of those groups. If they lost leadership positions, governors probably would not reappoint them to the Council. Even those Council members who were not the official leaders of political groups would endanger their positions on the Council by incurring the opposition of the fishing interest groups from their own states who observed their actions on the Council. The appointment process was highly political and became more so as the stakes in the management process became clearer in the first management crises. Those who wanted appointments and their supporters lobbied the state fisheries offices who forwarded nominee suggestions to the governors' offices. Fishing interest groups wrote letters and lobbied the governors' offices on behalf of candidates they favored. They lined up their congressmen to pressure the Secretary of Commerce to appoint the people they favored from the governors' lists of nominees.

If a candidate could not rally strong support, his chances of appointment were slim. If enough significant fishing interest groups opposed a candidate, he would probably not even make the governor's list.[35]

The loss of a Council seat meant considerable loss of personal prestige and renown not just in local fishery affairs but also in national and international fishery politics. It also meant loss of control over what could happen to the industry. Furthermore, a former Council member's own interests might be ignored in the planning process once he was no longer on the Council. Some members of the Council who resigned discovered that while the Council work had been very difficult, lack of representation on the Council presented them with serious problems in staying informed about what the Council, Congress, and the State Department were doing and in getting their views across. They learned what others in the industry were discovering, as one observer somewhat overstated it, "You don't have one of your guys and you don't have anything."[36]

The state fishery officials automatically had Council seats, but they were sensitive to fishermen's dissatisfaction, too. They held their government jobs as political appointees of the governors. While the governors were not always particularly sensitive to fishing interests, it was often important to both the governors and the state legislatures to appoint fishery officials the industry favored.[37] Fishery officials were responsive to the industry needs for these reasons but also because their own careers frequently would involve further work with the fishing industry.

Interests that might have favored rebuilding the fish resources with greater sacrifices from the fishing industry offered no support to Council members to replace what they would lose from the industry. Representatives of conservation groups attended few Council proceedings. As one conservation spokeswoman explained, too many other pressing problems required attention for them to afford a few days each month for attendance at Council meetings. No representative of consumer interests came to the Council meetings although consumers might have opposed the Council decisions that seemed certain to lead to less fish and higher fish prices.[38] Council members occasionally tried to persaude some groups who understood the constraints of the management process and the requirements that the Council pay attention to biologists' analyses to attend the meetings where fishermen would exert especially strong pressures. As one member told the New England Fisheries Steering Committee in urging many to attend the Council meetings, "Fishermen are getting very emotional about this." He hoped to add a less emotional element to the audience in support of the difficult job the Council faced in September.[39]

Certain conditions of decision-making intensified the effects of sympathy and political pressures on Council members. They had almost no information on which to base decisions which were certain to have profound effects on income distribution and social institutions. No economic data could show changes in costs, revenues, and profit positions in any sectors of the industry. No social information told how fishermen and their communities might suffer from change in some institutions and some elements in

fishing work. When hundreds of angry fishermen converged on meetings to tell of the economic and social problems the Council was causing, they provided the best information available. Biological analyses of the condition of the fish resources did exist, but Council members were often skeptical about their accuracy, and they weighed the economic and social information, however exaggerated in the process of political protest, particularly heavily.

The Council members had to make their most important decisions in public meetings often attended by large numbers of fishermen. That, too, intensified the pressures they felt from the fishing industry. Any member was immediately accountable for his action, and fishermen often impressed this upon the Council members in rebuttals and accusations in answer to Council members' comments. The tension the Council members felt showed when they escaped to resolve debates among themselves or to reach tentative agreement in hurried breakfast and dinner caucuses when fishermen were not present or were not aware of what was happening. Then they could put forward a briefer, more unified discussion at the formal meeting. Such recourse was rarely available, however, in part because the style alienated fishing industry representatives, too, and because Council members often had too many disagreements to resolve them in informal discussions.[40]

The strains of the management process on the Council members showed in later months. Some Council members resigned, and others declined to be considered for renomination when their terms expired. "How would you like to be up there?" asked one Council member after a particularly

frustrating and unproductive meeting of the groundfish committee. "The students may find this interesting," another said. "But for us, it's hell!"[41]

The continuing problems with the restricted fishery through fall 1977 were not the end of the difficult period. In December 1977 the emergency regulations that had increased the optimum yield expired. Therefore, the fishery reverted to the old optimum yield which fishermen had already exceeded. The director of NMFS closed the fishery under the provisions of the plan. Fishermen could not land any haddock, cod, or yellowtail flounder legally. Since fishermen could not avoid catching any of these species when fishing for other groundfish or flounder, fishermen had to stop fishing.

The closure came during the last week of the year when few fishermen worked because of winter weather and the Christmas and New Year's holidays, but the closure still outraged them and the Council members. NMFS and higher fishery officials in NOAA had imposed the closure without consulting the Council. The Council would have opposed the closure on several grounds, said Edward MacLeod, chairman of the Council. For one thing, fishermen harvested so few fish in the last week of the year that closure served no conservation purpose. "This isn't conservation, it's a slap in the face," MacLeod said. "It's incredible to close a fishery for a week for nothing."[42] In fishermen's view, the government was telling them they could not do their jobs, the ultimate outrage to groups used to working hard and believing in free enterprise. For many on the

Council and in the industry the December closure was an alarming indication of what could happen at other times of year when the loss of fishing time might be more costly and more lengthy.

The closure heightened all the tensions among fishermen that had simmered through the fall. In Gloucester approximately seventy-five fishermen brawled on Fishermen's Wharf when several small boats went fishing despite the closure and NMFS law enforcement did not promise fast enough punishment to satisfy the skippers of larger boats which had to remain tied up.[43] The closure also heightened the alienation between NMFS and NOAA on one side and the Council and the industry on the other. Again NMFS's behavior seemed guided by very little understanding of the fishing industry and an aim to take over management from the Councils. With NMFS as scoundrel, however, the Council was shielded at least for the time from the wrath of the industry; fishermen supported the Council against NMFS.

The Disintegration of Groundfish Management

The events of September through December 1977 contained all the ingredients of management problems the Council would face in 1978. However, the controversy and difficulty in managing the groundfish industry increased tremendously compared with the troubles of the first months of management crises. As the Council discussed revisions in the groundfish management plan for 1978, they tried to correct some of the conditions that had caused problems in 1977. They divided the annual

quotas into quarterly shares in response to fishermen's pleas to "spread it out more." The new provisions substituted vessel classes for the 5510 rule and converted the cod fishery from directed to bycatch fishery when a smaller percent of the total catch had been harvested.

The changes solved few problems. On January 1 the closure ended, and boats went fishing again. This time the race for the fish was more intense because fishermen now understood better that they had to catch fish before others did or they would lose their opportunity when the fishery closed again. Fishing pressures were also more intense because new fishermen and new boats steadily entered the industry. No one knew exactly how many newcomers had arrived during the last four months of 1977, but according to one report, new boats entered the fishery at the astounding rate of about one every four days.[44]

By the beginning of March the directed fishery for cod closed. This time fishermen had learned how to look for loopholes that would allow them to bring in larger catches than the bycatch regulations allowed. Many more fishermen decided that they would profit more by breaking the law than by observing the regulations. Therefore, the restrictions, while grating on the fishermen, had little dampening effect on the overfishing.

Beginning in late February, the Council tried desperately to negotiate with NMFS and NOAA officials to prevent a total closure of the haddock and later the cod fisheries.[45] They succeeded in putting off the closures for awhile, but the Secretary of Commerce announced a total closure from March 19 until a new quarter with a new allocation of optimum yield began

April 1. The spring closure particularly hurt small-scale fishermen who had not been able to fish during the winter months; it especially threatened Maine fishermen for whom the cod only became available in late March. Large boats, in contrast, could take advantage of a loophole in the closure rules; they left for the fishing grounds just before the midnight deadline when the closure took effect and landed catches during the closure as prices rose.

Protests from the industry were more intense than ever before. Hundreds of fishermen attended the Council's March meeting. Gloucester fishermen demanded the resignation of the director of NOAA. Busloads of Chatham, Massachusetts, fishermen arrived to register their objections. As their representatives spoke, they waved signs which read "The Fishing Industry, 1620-1978, May It Rest in Peace" and "In Cod We Trust." Maine inshore fishermen stated their views. Television crews kept the Council members lit up under bright lights, and newspaper reporters moved through the audience interviewing irate fishermen.

As the industry learned, closure was the worst of all the results of fishery management. It threatened their incomes more than restricted fishing; it was very inequitable; it left them without work. Closure offended them more than any other measure; it meant government had taken control of one of the most important aspects of their lives. The Council members realized even more acutely than in December that closure put them in the worst possible political position. They had to take blame they felt they did not deserve. They had to bear the protests of more fishermen than at any

other time because fishermen who could not work had time to attend the Council meeting to show their displeasure. By the end of March the Council had another major implicit goal; they would attempt to avoid a closure at any cost.

In April fishing reopened. During April the Secretary of Commerce approved several more changes in the groundfish plan that the Council and the industry thought might deal with some of the problems they had confronted. The new regulations restricted the catching of cod at all times rather than after fishermen had taken a percent of the quarterly quota. The Council planned to reduce trip limits as necessary during the quarter to prevent another total closure. In another change, newly defined vessel classes received allocations of each quarter's quota based on the shares they had taken since 1970. Dan Arnold of Massachusetts Inshore Draggermen's Association and Jay Lanzillo of Cape Cod Commercial Fishermen's Coalition had designed the vessel allocation plan to ensure that small boats had an opportunity to fish even when the large boats could beat them to the quota. At the same time, they wanted "to preserve the possibility to be big achievers" within their own group, as the president of MIDA said. According to Lanzillo, the plan left room for competition, and "Competition is what makes fishermen go fishing." Another change put trip limits on a weekly rather than a daily basis, as fishermen had requested.

By the middle of May, however, even earlier than in the previous quarter, the Council faced the familiar dilemmas again. They could reduce the landing limits in order to prevent another closure, but to do so

they would have to cut the catch allowances so much that they would inflict "economic closure." Fishermen could continue to fish but could bring in so little fish that they could not break even and would have to stop fishing.

The causes of the problems were familiar, too: an early race for the fish, loopholes, and illegal catches. The number of boats licensed for groundfishing had risen from about 1100 in 1977 to close to 1600, the NMFS regional director told the Council.[46]

The Council looked for ways to avoid making the decision to reduce catch allowances. They raised administrative points, criticized the biological analyses, attempted to shift the responsibility from themselves. With only two weeks on the current catch allowances, one Council member said, NMFS could not possibly project the harvests for the rest of the quarter; therefore, the Council should not change the limits yet. Another Council member agreed. He wanted to avoid inflicting still another change in the regulations on the fishermen, as the new NOAA assistant administrator for fisheries, Terry Leitzell, had recommended. "I can't keep up with all the changes. . . . I have three staff people working on this full time, but I can't make heads or tails of it," said the Council member. Fishermen would have even greater difficulty since they had no staff. "The fishermen can't get away from the fish," the same Council member continued. "The [biologists'] numbers are wrong or something."
"What if we create social and economic havoc and save the fish," put in another, "and then we find the biologists made a mistake. The price to

pay doesn't make sense." Other members of the Council suggested they should meet with Leitzell and his staff before they made a decision despite the fact that the Council had spent substantial time since its founding fighting the efforts of NMFS and NOAA to control the management process. The Secretary of Commerce had not instituted all the provisions of the Council's proposed changes in the plan, a Council member argued. "Until we put the plan into effect, I am opposed to monkeying." The Council adopted a motion to put off changes in trip limitations and to meet with Leitzell and his staff "since there appears to be no solution to the problem of groundfish catch limitations other than a total open-total closure situation."[47]

In every other crisis, the Council had believed that changes in the plan might solve the problems. They had adopted new measures to try to achieve the evolving implicit goals. While the goals had remained unclear and changeable and the measures had been piecemeal and had not solved the problems, the Council had still attempted to manage. In May, however, the Council finally had no ideas about ways they could deal with the management difficulties. Their planning disintegrated into gimmickry which offered hope of escape from the awful choices they needed to make.

Escape proved difficult, however. Leitzell announced that weekly catch limits for cod and haddock would be sharply reduced by July 2. "If these guys are going to go by the book, they'll starve to death," declared the head of the Atlantic Fishermen's Union in Gloucester.[48]

Fishermen were outraged at the low catch levels. They rallied their congressional senators and representatives to pressure NMFS to raise the trip limitations. Once again, fishermen moved en masse to the Council meetings to protest, although everyone knew that as long as there was no total closure, fishermen and boat owners could do very well by taking advantage of loopholes and by landing illegal catches. Beginning in late July, however, some vessel classes had taken their entire annual quota of some fish stocks despite emergency increases in optimum yields. In the next weeks, more vessel classes faced closures. Boats had the prospect of total closure in all areas from September through December.

Confronted with the low catch limits and the prospect of closures, the Council agreed to ask the Secretary of Commerce to approve a new start to the fishing year as soon as possible under a new annual quota with all the management provisions in place which the Council had requested earlier.[49] The Secretary agreed to the proposal in late September; a new fishing year began October 1. The new year spared the Council and the industry from closure for the rest of 1978. The respite could only be temporary, however, because the Council's management provisions to which the Secretary agreed differed in only trivial ways from the ones that had caused the Council and the industry so much trouble during 1978. The "new year" seemed to represent the ultimate gimmickry.

Elements of a New Try at an Almost Impossible Task

As the Council's groundfish management degenerated during summer 1978, the Council's staff and the Scientific and Statistical (S and S) Committee pressed the Council to begin work on a more solid plan. "We have regulations now but not objectives," Spencer Apollonio, executive director of the Council's staff, said. "We have no plan either. We have a partial set of regulations with no clear rationale." One of the members of the Council staff said, "The staff wants a distinction between objectives and management instruments." It was not reasonable to think about instruments until they had objectives. "The staff can't do analysis of consequences without objectives from the Council," Apollonio impressed upon the members. The S and S Committee, made up of biologists, economists, and anthropologists researching the New England fisheries, asked for even more: "While we recognize the pressing need to formulate short-run management strategy for groundfish, we would like to emphasize that we cannot appropriately advise the Council on management strategy and techniques until the Council decides on long-term management objectives for the entire New England fishery [emphasis added]."[50] Pressure came from Washington as well with the message that only if the Council began to develop a plan would NOAA listen to requests to put off closures. Terry Leitzell approved an increase in the optimum yield for the fisheries threatened with immediate closure in order to give the Council more time to state their plan objectives and adopt a new plan.

Only under the extreme pressures of impending closures did the Council move to define goals.

1. New Definitions of Goals

At special meetings in July the Council settled on a set of goals. The overall objective, the Council decided, "shall be to generate over the period of the plan the greatest possible joint economic and social net benefits from the harvesting and utilization of the groundfish resource, ensuring that by the end of the period the relevant groundfish stocks shall be in conditions which will produce enhanced and relatively stable yields from the groundfish fishery in future years." The Council had a number of sub-objectives: (1) "Prevention of abrupt changes in the relative shares of domestic user-groups in the resources"; (2) "Freedom of decision-making and choice for individual participants in the fishery should be maintained to the greatest possible extent"; (3) "Inducement of diversification in the groundfish fishery towards increased utilization of species other than cod, haddock and yellowtail"; (4) "Minimization of management regulations, subject to attainment of the overall objective"; (5) "Minimization of enforcement costs, subject to attainment of the overall objective"; (6) "Provision for accurate and consistent economic, social and biological data required to monitor effectively and assess the performance of the fishery relative to the overall objective."[51]

The staff sought to make the overall objective more specific. What were "economic and social net benefits"? Who should benefit?

What were "conditions which will produce enhanced and relatively stable yields"? The Council agreed, "Benefits to the users would include incomes to harvesters and processors as well as values to consumers. . . . benefits include the values to the user-groups associated with the size of the fish stocks at the end of the planning period. Costs to users involve harvesting and processing costs, as well as management and enforcement costs." Social benefits and costs "are implied," the Council decided, in the sub-objectives of prevention of abrupt changes in the relative shares of domestic user-groups, freedom of decision-making, and minimization of enforcement costs. The Council agreed that the biological constraint on the overall objective meant "(1) an acceptable probability of achieving the biological stock conditions by the end of the period, and (2) a minimum spawning stock level for each species which ensures an acceptable probability of continued recruitment." Achievement of the objective would require a multiple-year planning period because one year's harvest levels affected options for later years.[52]

The goals represented a significant improvement over the implicit goals of the plan of March 1977. They were explicit; the Council discussed and agreed upon them, and they and the staff could refer back to them in later planning. The goals represented the Council's aims better than the original implicit goal; the overall objective emphasized maximization of economic and social net benefits rather than fish stock sizes.

The statement of goals left many issues unresolved, however. Many terms remained undefined. For example, what were "values to

consumers"? What did "values . . . associated with the size of the fish stocks at the end of the planning period" mean? What was an "acceptable probability" of achieving biological stock conditions? The Council would need to answer these questions implicitly if they did not spell out the definitions before evaluation of management measures. If the Council allowed the answers to emerge implicitly in the management process, the difficulties in losing sight of goals as they rewrote regulations could recur.

The effort to operationalize the goals raised as many questions as it answered. Most important, perhaps, the evaluation of benefits and costs from different perspectives could suggest different directions for management. Management measures which would maximize consumers' net benefits would surely be quite different from those which would maximize net benefits for fishermen. How would the plan trade off consumers' benefits against fishermen's or processors'? In the Council's political setting, mention of consumer interests seemed only a wave of the hand to cover what the FCMA asked. Calculation of benefits and costs to different "user-groups" in the fishery would also yield very different results, and inequitable effects of fishery management measures had caused the Council some of its worst problems. How would the plan define different user-groups, and how would the Council decide to allocate net benefits among user-groups?

The Council's experience had suggested many important social costs and benefits. Definition of those seemed particularly inadequate for the evaluation of management measures. For example, management efforts

had caused brothers to fight each other in Gloucester where the Sicilian fishing community centered on family decision-making and family boat ownership. It was not clear whether the Council decided that such issues, the damage to traditional institutions, did not matter, neglected them, or intended to handle them later.

Once the Council defined social costs, dilemmas would remain. How could a social cost be valued? How could social costs be compared with economic ones? Which social costs should be considered for which user-groups?

The Council's vague definition of goals was understandable. They had had considerable difficulty in specifying goals at all. Going farther would prove even harder because the members of the Council who represented groups with different interests would clash. More specific definitions would also draw the opposition of the fishing interest groups who observed the activity of the Council; the Council could not satisfy everyone.

Even a group working in an apolitical setting would have had difficulty going farther, however. Such work would require a stronger ideological framework and value judgments, guided by that ideology, about the importance of some styles of fishing compared with others. It would require considerable knowledge of the fisheries, but those who understood most about the industry, some of them on the Council, only appeared all the more impressed with the complexity of the issues.

Planning for the use of the fisheries constituted an enormous, immensely complicated public economic development project.

2. Difficulties in Choosing Management Measures

The complexity of the task seemed even more troubling as the staff prodded the Council to move from listing goals to discussing alternative management measures. By April 1979 the Council still had not decided on management measures. "I never dreamed we would still not have a plan," said one former Council member. Part of the explanation for the delay was that the Council and its Groundfish Oversight Committee spent enormous amounts of time handling the same recurring crises in the new fishing year.

Another reason was that regardless of the fact that they had agreed on goals, some members no longer believed, if they ever had, that the Council should manage the fisheries at all. According to Dan Arnold, a member of the Council as of fall 1978, "On the one hand there is a group of Council members looking for schemes to make Fisheries Management the least onerous to fishermen; and on the other hand a group of Council members that regard Fisheries Management as a series of arbitrary regulations that consider the needs of industry as secondary or even not at all."[53] Neither of the groups Arnold saw, if they could be categorized so clearly, believed in managing the fisheries. Some of the members, particularly ones in Arnold's second group, pressed hard for very narrow group interests or pursued primarily personal or

bureaucracy-building aims. There was certainly also a group which Arnold did not describe which remained committed to fishery management in a style that would take account of all the aspects of the goals the Council had specified. Arnold's first group might be called on as allies if the pro-management members could provide enough direction because both groups would certainly agree that management measures should not cause great hardship and difficulty.

Another partial explanation was that learning within the Council and the fishing industry took place unevenly. Certain Council members not present for some of the earliest debates and problems supported measures that others had long before debated and abandoned as fruitless. Differences between the fishermen and the Council were more extreme. For the most part, fishermen missed all meetings except those called during the severe crises, and they made the same arguments every time they came. The audience of fishermen evolved continually; each newcomer had to go through the process of learning how the Council operated and what it could do about management problems before comments could be new and constructive. Few progressed with the Council in the process of thinking and deliberation on management efforts. Proposals which they pushed hard often would cause troubles the Council had already lived through. For example, in 1978 and 1979 Gloucester fishermen pushed for a simple plan to allocate several thousand pounds of fish per man per trip year round. As Council members pointed out, such a plan would place smaller boats at a great disadvantage in the race for the quota, just as

the regulations on quarterly allocations with trip limits had in early 1978. The Council had to address the same points again, as new members and interest groups raised them.

Another especially important reason that the Council's progress stalled was that the Council could not figure out what to do; the task was so difficult intellectually and politically that they made almost no progress in confronting the issues. Council discussions began to sound like reruns of debates from the two years before.

For those on the Council who aimed to manage the fisheries and who wanted to minimize the problems for fishermen, three major alternatives existed for management measures: mesh regulation, quotas, and limited entry.[54] Each approach presented difficult management dilemmas.

Fishermen pushed for mesh regulation and other similar measures, such as hook size regulation, as the best means of controlling fishing effort. They favored such an approach because it would not affect their business or fishing decisions; it would be equitable; it was easy to enforce; and it reduced the mortality of young fish which could escape through the larger holes. Unless mesh size were regulated, fishermen would use small mesh, however, because they believed they would catch more fish that way. The Council never seriously considered mesh regulation by itself as an adequate control on fishing mortality; it was included in combination with other measures. Biologists' analyses and experience with mesh regulation showed that mesh alone could not keep harvests

near optimum yield.[55] Mesh was a satisfactory way to increase yield from a fish resource by allowing more small fish to mature, but with enough fishing pressure on the resource, the stocks would still be overfished and would decline. While mesh regulation might have achieved the Council's goal of maximizing social and economic benefits in the very short run, it could not result in satisfactory stock conditions however defined, and it seemed impossible that the Secretary of Commerce would approve such a plan.

The second major route for management, quotas, was the one the Council had taken. Everyone on the Council and in the industry agreed that the quota system was not working. Opinion varied about why that was so. According to one sizable group, quotas were not working because optimum yield was set too low; the biologists' analyses were incorrect. Dan Arnold spoke for that point of view: "It was apparent to many of us that it [the MIDA Plan] wouldn't work because of inadequate quotas. Nor will <u>any other plan</u> work with inadequate quotas. No allocation method that does not reflect current abundance of fish and the needs of the industry (producers, processors, and consumers) will work."[56] As many on the Council agreed, the biological assessments may have been incorrect. However, as the staff and some Council members pointed out at several points in 1978, even doubling the optimum yield would not solve the quota problems; there would still not be enough catch to go around without severe catch restrictions and closures.

When the Council adopted the quota approach, as the story of that effort shows, they thought that they could introduce supplementary measures that would solve the problems of overfishing and economic and social hardship. By the time they confronted choices about management measures for the new plan, few still believed that. At the heart of the difficulty, many quite correctly came to believe, quotas did nothing to discourage the hundreds of newcomers flooding the groundfish industry. As the numbers in the industry increased, the share each boat might expect if the quotas were enforced decreased. Therefore, it became less and less likely that there would be enough fish to keep everyone in business if the quotas were observed. Because of political, social, and institutional factors described earlier, fishing levels far exceeded the quotas. As Spencer Apollonio recalled, "It was not the Council's intention to get into this kind of situation. The present problems became inevitable once the initial step had been made to set quotas. At the time, nobody knew better. No one anticipated that fishing expansion would be so rapid that we would substantially exceed those quotas. Once that happened, all the other things, like season allocations, became unavoidable."[57] Profits and wages in the groundfish industry were exceptionally high, especially for the offshore industry. Eventual expansion seemed inevitable and probably would have doomed a quota system sooner or later. Only the speed with which it happened seemed surprising.

If large numbers of new boats were the root of the Council's difficulties with quotas, the staff and some Council members suggested,

the Council should begin to consider measures to restrict entry into the industry. Limited entry could take many forms, but its purpose in the Council's view would be to limit the number of participants in the industry so that their activity would provide everyone with reasonable incomes and freedom of decision-making but would not lead to severe overfishing. Ideally, the proper number of participants in the industry would exert appropriate fishing effort, and the Council would not need to regulate effort through catch limitations or other measures.[58]

Limited entry in any form instituted with little information about the industry could be particularly problematic; those were the conditions under which the Council had to operate. Without knowing much about current operations, the Council would have to make decisions that would have enormous effects on income distribution. For example, the Council would have to make important choices about who should be part of the industry. They would have to decide whether to include people who fished but had non-fishing jobs most of the time. Who were part-time dilettantes, and who were serious fishermen? They would have to make decisions about how to provide for inshore fishermen who moved among many fisheries to maintain their incomes. Since the industry was already overcapitalized, they would have to make decisions about how and when to retire some members of the industry or whether to institute catch restrictions until fish stocks grew or fishermen left the industry. They would have to decide whether fishing rights could be transferred and if so to whom. Could large corporations buy the rights,

or should owner-operators be the only ones entitled to do so? Should sons of fishermen have special preference in allocation of fishing rights? These were only a few of the complicated issues which the Council would have to confront. In Apollonio's opinion, "Limited entry will turn out to be as difficult a management concept as optimum yield." Experience with limited entry programs suggested that he was right although such programs still offered much more promise than quotas.[59]

The Council could not reach the point of discussing some of the decisions they might have to make, however. No management proposal aroused so much animosity and opposition from the fishing industry and from many members of the Council as any suggestion of limiting entry. The opposition was so intense that it prevented the Council from discussing alternative forms such a program could take. They argued only about whether they should even consider limited entry.

The staff and others pointed out that those already in the industry would do well financially under such a system. Their profits would be assured by limiting new entry into the industry. This would be especially true for the fishermen who specialized in groundfishing, larger offshore boats which almost never fished for anything else. That constituency was small, however, especially when groundfish was narrowly defined as cod, haddock, and yellowtail. Suggestions for limited entry programs came from the NMFS spokesman and from the big boat owners on the Council to be applied to management of species in which they specialized.

3. Fishermen's Opposition to Limited Entry

Very few of even the larger boat fishermen favored limited entry, however. One Gloucester fisherman's wife foresaw the pressure against it, "With more boats, the pie is cut into smaller pieces. . . . So we need limited entry of new boats. People will say, 'You have your boat so now you don't want more.'" Among the Gloucester fishermen with larger boats the opportunity to decide freely to buy a new boat so that they could make more money or so that another member of their families could become skipper seemed especially important.

Few offshore fishermen in any ports expressed views on limited entry. In Gloucester, fishermen were uninformed about it. However, as they became more angry about the quotas and about NMFS enforcement, their opposition to the suggestion of any government program grew.[60]

Small boat fishermen far outnumbered the offshore fishermen in the groundfish industry. A fair number were open to considering limited entry, and some said they favored it. "If anybody can go into fishing, then I ought to be able to go plumbing," one groundfish fisherman argued. "Hundreds of skiffs will hit the water [during the summer]," he continued. "There are long lines at the fish pier waiting to unload. . . . It may be only a few fish in a boat, but it adds up. It lowers the price."[61] Except for an occasional comment from a lobsterman on limited entry in the lobster industry, small-scale fishermen who felt willing to consider limited entry did not speak up at the Council meetings, fishermen's forums, and other places where limited entry was under discussion.

The majority of small boat fishermen adamantly opposed limited entry. Unlike the large boat group, many had thought about limited entry, and their spokesmen enumerated the reasons for opposition. Some of their arguments, not always consistent with each other, had economic factors behind them; all reflected strong normative views about the character of the fishing industry, the nature of their work, and government's proper role.[62]

Inshore fishermen survived economically, opponents stressed, by moving from one specie to another as price and the availability of fish changed. If fishermen were shut out of groundfish or if they could only participate in groundfish to a certain extent, they might not be able to stay in business. "Most of us are 'jacks of all trades', and are apt to jump into whatever either pays the most or interests us the most at the moment," editorialized Maine Commercial Fisheries. "So we find lobstermen who are seasonal carpenters, groundfishermen switching to scalloping, and so on. . . . Then what happens to, say the 'lobster specialist', if either natural cycles, economics, or whatever puts him between a rock and a hard place?" "To keep the wolf away from the door we have to switch from scallops to fin fish to lobsters," said one Maine fisherman.[63]

Proponents of limited entry argued that such programs would allow for greater freedom for fishermen because catch regulations would no longer be necessary. Fishermen countered that the limited entry schemes would mean less freedom. People would find themselves "locked in" one

fishery and excluded from others. "To limit entry in one fishery always affects other fisheries," Council member Jake Dykstra warned. Limited entry programs would spread to other fisheries and end freedom there, too. "Because of low stocks or low prices, the guy in the 'closed shop' of one fishery could find himself outside looking in if he tried to switch to another fishery," said Lucy Sloan of the National Federation of Fishermen.[64]

The cost of a permit to fish would rise so high that individual fishermen could not afford to buy one, fishermen stated. Large corporations, the only groups which could pay for such expensive permits, would buy out individual fishermen in order to reap profits. Once corporations had bought enough fishing rights, individual boat owners like the fishermen in the industry probably could not compete. That would spell the demise of the entrepreneurial, independent fisherman. Fishing was attractive to many inshore fishermen particularly because it provided those job characteristics. They believed strongly that fishing should stay that way.

Fishermen warned that some people talked about extracting "economic rent" from fishermen. That meant that the government would decide how much a fisherman deserved to earn in a year. "I'm not sure I would like to have a situation wherein my income was essentially decided by a civil servant who may be making less money than I am," said Jim O'Malley, one of the most outspoken critics of limited entry. Government controlled prices would follow a limited entry program, others warned.[65]

Fishermen offered a large number of other arguments as well, but these were not the major reasons they opposed limited entry. The points they made seemed aimed at gathering allies in opposition. Cost of running limited entry programs had been particularly high, they said. As everyone tried to find a way around the limited entry program, there would be more regulations and more regulators, Jake Dykstra said. The government would get into banning technological advances in catching, O'Malley warned. Limiting entry had not meant reduced catches, Dykstra said; fishing effort remained too high to conserve the resource.[66]

The Council might have discussed many of the points the fishermen raised as they considered how limited entry might work. Many of the legitimate problems fishermen saw might be handled with an appropriate program design. The Council might not have resolved other issues but might have decided that such costs were tolerable considering the problems of alternative management styles.

Behind all the fishermen's arguments, however, were objections that were undebatable. Strong beliefs about fishing rights and about government intervention provided the intense energy behind their opposition. Large proportions of small-scale fishermen expressed the conviction that anyone should be able to fish. "Fish are a common resource, and it's unfair to lock people out." "I don't think you should tell someone

whether or not he can go fishing." "Limited entry is a form of communism. . . . If my son decides to become a fisherman--no one should stop him." "Anybody can be President. I guess anybody ought to be able to go fishing."[67]

They held views about government's role in directing the fishermen's lives. "Not very many of us have a college education, yet we have managed to successfully run our businesses," Dan Arnold said. "Now we are beset by people with 4, 5, 6, or more years of college education in various disciplines (biology, economics, social sciences, law) who are busy telling us how we can better manage our affairs than we have in the past. Do we need them, or do they need us?" At another time, Arnold criticized "NMFS' need to manage people not fish." Fishing ought to remain a center of "free enterprise," fishermen said. As O'Malley impressed on his audiences, limited entry meant a bureaucrat would tell fishermen what they could do as well as how much they could make.[68]

A year after the Council had decided on goals, they had made little progress on the rest of a plan. While the management problems they had confronted with quotas made it reasonable for them to begin to debate the variety of limited entry possibilities, political opposition made the dialogue seem virtually impossible. One could hope that gradually the Council would begin to consider such alternatives seriously, but meanwhile the prospects for groundfish management seemed particularly difficult. Other pressing issues related to the groundfish plan called the

attention of the Council and the industry. Fury over a logbook from NMFS which would require fishermen to keep extensive catch records which might be used to prosecute fishermen for rule violations took considerable time and energy. Again, NMFS actions seemed bewildering and destructive to virtually any observer. A treaty between the United States and Canada, necessary because of overlapping 200-mile zones and fishermen's traditional fishing in the other country's waters, allocated shares of the fish resources to each country and set up a new management council which would assume some of the responsibilities of the FCMA Council. Council members and those in the industry had to organize to try to save the fish resources they felt they needed for themselves and to preserve the Council's authority. All these problems made it hard to spend enough thought on new groundfish approaches. Political opposition to limited entry did not abate, and decisions to accept some forms of limited entry still seemed remote.

CHAPTER 7

SUMMARY AND CONCLUSIONS

By 1979 the New England offshore groundfish industry had a long history of difficulties and of appeals to government for relief. In the years between World War II and the mid-1970s, the industry had gone through two major periods of efforts to get help for their troubles. The industry was entering a third period as the 1970s drew to a close. In each era, industry representatives held strong views about the causes of their problems; government officials offered explanations for the fishing industry's difficulties which they acquired in whole or in part from industry statements; and Congress and agency officials acted on those assessments in providing federal aid to the industry. The programs to aid the fisheries failed to solve the groundfish industry's problems. The history of the industry's troubles, different groups'assessments of the causes of difficulties, and the direction and results of government efforts to help have been the basis for this study.

The First Era of Industry Problems: Late 1940s Through Mid-1960s

Diagnoses of the Source of Problems

From the late 1940s through the mid-1960s industry officials from the New England offshore groundfish industry presented a concise explanation for the problems they faced. Large quantities of imported groundfish,

they said, drove the price of groundfish so low that New England boats could not break even, fishermen earned very low wages, and dealers realized no profits. Imports sold at low prices because production costs in other north Atlantic countries were much lower than in New England. Wages were considerably lower in other countries, industry representatives pointed out; and governments subsidized their fishing industries to reduce costs even further.

Groundfish industry spokesmen presented this assessment of their problems to the Tariff Commission, to Senate and House committees, and to administration officials. They emphasized different aspects of the explanation in pushing for different types of legislation, but for the most part they held these views into the mid-1960s.

Congressmen and agency officials acquired their definition of the causes of problems from the groundfish industry with a few differences. Government and industry views diverged in the understanding of who had the problems. While congressmen mentioned Gloucester and Boston when they considered the problems of the fishing industry, they usually did not conclude that only certain groups, principally offshore groundfish fishermen, who happened to work out of Gloucester and Boston for the most part, needed help. Although congressmen listened to statements from the groundfish industry officials, those spokesmen rarely pointed out that only their segment of the industry suffered while other groups prospered. Industry officials had good reason to present the problems as those of broader groups than their own. With a larger constituency, Congress

might respond more readily to the pleas for aid. Agency officials may have realized more clearly than congressmen that the problems of the New England industry were those of the offshore groundfish industry. The studies they commissioned to look into the industry's troubles drew conclusions that agreed in all important respects with those of the industry.

The best explanations for the problems of the groundfish industry from the late 1940s through the mid-1960s were probably quite different from those which the industry offered and government accepted. Most segments of the New England industry faced rising imports of their product. Prices in other fisheries, however, remained high enough to provide satisfactory profits and wages. Assessing the effects of imports later, some representatives from other fisheries through that imports had helped to hold prices down enough to keep people buying. In contrast, the core of the groundfish industry's problem of very low prices may have been that demand was very low.

After World War II, demand for groundfish fell and probably became more elastic as meat became available again at prices that made it attractive compared with fish. Those in the groundfish industry had expected the prosperity of the war years to continue. They had invested in large numbers of new and converted boats; newcomers had filled the additional sites. Although the entry of capital and labor had been rapid, those resources could not leave the industry quickly in response to the downward shift in demand. Vessels represented a very durable capital investment with little resale value except after extensive alterations to

make them useful in prosperous fisheries in other parts of the country. The majority of the fishermen on the offshore boats had emigrated from Portugal, Sicily, or the Canadian Maritimes. They had disadvantages in finding other jobs; they had very little education, little experience with other types of work, and trouble speaking English. Some belonged to families with long fishing traditions and felt reluctant to leave fishing. Workers moved out of fishing into other jobs very slowly.

As the number of boats and fishermen and the quantities of fish they landed declined during the 1950s, prices might have gone up enough to allow those who remained in the industry to make profits and reasonable wages. As population increased, the demand for fish might gradually have shifted upward if nothing else had changed. However, by the mid-1950s a new product, fish sticks, entered the domestic market. Demand for groundfish shifted downward again as many people bought fish sticks instead of fresh and frozen groundfish fillets. The New England industry produced all the fresh groundfish and a share of the frozen fillets, but importers provided all the ingredients for fish sticks.

Implications of the Alternative Diagnosis of the Problems

This assessment of the groundfish industry's problems suggests that government might have relieved hardship in the groundfish industry by stimulating demand for groundfish during the 1950s and the early 1960s. Government might have launched marketing and promotion efforts and purchased more of the New England product. If demand had not shifted

downward as much as it did, more boats and dealers in the groundfish industry might have broken even, and more fishermen might have earned attractive wages. Benefits might have been only temporary, however. Increasing demand could have raised profits to levels where boat owners fished more days, a reasonable result because so many offshore groundfish vessels spent considerable time in port. Then the boats would have put more pressures on the fish resources, harvested more fish for awhile, and eventually reached levels of sustained yield where costs were higher for a given harvest of fish. If more boats had entered the fishery in response to higher profits, many of those already part of the industry might have suffered as rising costs wiped out the effects of higher prices. Government would have needed to place restrictions on entry to be sure that programs which stimulated demand benefited those already in the industry.

From the perspective of the larger economy rather than the industry, such entry restrictions would have been important, too. During the 1950s and 1960s Canadian and American fishermen harvested groundfish at what biologists now believe were the highest levels of sustained yield from the resources. Additional effort from more fishing days by boats in the industry or from new boats would have meant that the fishery would have fallen to lower levels of sustained yield as the resources became depleted. Economists suggested, further, that the fisheries tended to attract too much labor and capital. Because the fisheries were open to all and because each fisherman's activities increased all others' costs,

the industry produced at a level where the cost of each additional unit of production was considerably greater than its revenue. In other words, labor and capital could produce more in other industries than in fishing. While that argument seemed weak considering the kinds of workers engaged in offshore groundfish work in the 1950s and 1960s, restrictions on entry into the fisheries still would have been important to keep more workers from becoming trapped in fishing as government programs tried to stimulate demand.

The government also might have aided the groundfish industry during the 1950s and 1960s by helping vessel owners to sell their boats and fishermen to move into other jobs. Government might have purchased boats, converted them, and sold them in prosperous or underdeveloped fisheries in other parts of the country. They might have targeted retraining programs to fishermen to try to improve their chances of getting other jobs that were at least as good as fishing. As boats and fishermen left the industry and landings declined, costs of fishing would have fallen, and prices would have gone up. Those who remained in the industry would have been better off.

Efforts to Help Based on Industry-Government Diagnoses

The federal government did not take either of these routes in its attempts to solve the fishing industry's problems during the 1950s and 1960s. The government did sponsor some very small-scale efforts to increase demand for groundfish through marketing and promotion, and the

government did institute some buying programs. The buying programs probably benefited fish stick processors more than the New England groundfish industry. Efforts to stimulate demand were insignificant in part because the industry was not particularly interested. Such efforts did not fit their definition of the causes of their problems. Tariffs and cost-reducing programs would help, they believed. Another reason that programs to stimulate demand were so unimportant was that the programs often required those in the groundfish industry to make expenditures which they could not afford. Indirect efforts to increase demand through higher standards for handling and sanitation never worked because the industry did not want to make changes or could not afford to do so. The purchasing programs touched the groups without the problems because government buyers did not understand that the offshore groundfish industry had the problems and that government should buy domestically caught groundfish rather than fish sticks in order to benefit the New England fishery. Fish stick processors may have been more organized in soliciting government purchases, and they offered an attractive, durable product.

Government did nothing to make it easier for boat owners to sell their vessels or for fishermen to find other jobs. The industry, campaigning for subsidies for boats and for training programs to attract young men to fishing, would have opposed any such measure. No one in the government seriously thought of limiting entry to the groundfishery in those years. Such a suggestion would have seemed ludicrous in light of the diagnoses of industry problems.

Consistent with their views of the sources of the groundfish industry's problems, industry representatives pushed for higher tariffs during the 1950s to make imports more expensive. Those efforts failed because fish stick interests opposed higher tariffs and because the State Department feared the effects higher tariffs would have on foreign relations and on the political views of the north Atlantic countries which supplied groundfish to the United States. After they failed to get higher tariffs, industry representatives pushed for programs that would reduce the costs of domestic production of groundfish so that New England producers would face costs more like those of the exporting countries. Then they would be able to compete with the foreign producers, they said.

Between 1956 and the late 1960s the government sponsored programs to reduce the costs of insurance and research and development; offered loans for vessel repair and construction and for gear replacement; ran training programs to lower the costs of finding and training crew; and subsidized boat construction. Subsidies for boat construction and loans for vessel repairs, gear replacement, and boat construction poured the largest sums of money into the New England fishing industry.

The Deficiencies of Intervention

The programs did not succeed in solving the groundfish industry's problems. They could not have solved the problems because they were based on incorrect assessments of the causes of difficulties. Indeed, if industry had succeeded in getting the help they most wanted during the

1950s and 1960s and if those programs had accomplished what they originally aimed to do, then the industry might have been worse off than before. For example, tariffs on groundfish would have raised prices slightly, but demand for groundfish was extremely elastic; and as prices rose, the revenue the industry received would have fallen even further. Boat owners, fishermen, and dealers would have been worse off than with lower prices. If modern vessels had replaced most of the offshore groundfish boats, as the industry representatives and government officials had hoped in setting up the vessel construction subsidy program in the early 1960s, the industry would have suffered. Increased fishing pressures from the new vessels would have depleted the fish resources and raised the costs of catching the same amount of fish. The added costs would have offset the higher revenues for the new boats. Boat owners who had older boats would have been worst off; they would have had more difficulty breaking even as costs of harvesting rose.

The results of programs never tested the validity of the explanations of industry problems because the programs were not implemented in ways that allowed them to affect the groundfish industry enough to influence its fortunes. For example, loans went principally to small boat fishermen, mostly lobstermen; the largest number of subsidized vessels entered the scallop fishery.

There were several reasons why the programs touched the groundfish industry so little. Again, government officials did not understand well enough that the problems to which programs responded were those of

the groundfish industry. Even when politicians did see that the groundfish industry needed the help most, they could gain favorable publicity by providing aid to a broader group.

Neither legislation nor regulations directed aid towards the groundfish industry except in the first vessel subsidy program. Therefore, fishermen and boat owners applied for loans, researchers applied for grants, boat owners sought subsidies, but little of the activity touched the groundfish industry. The most prosperous groups in the industry applied for boat loans and subsidies most frequently. Program administrators, seeking to put all their funds to use and hoping to assure that loans were repaid and that subsidized vessels profited, saw the applicants from more prosperous segments of the industry as better risks and gave them the largest proportion of loans and subsidies.

Legislation also did not work as planned because funding was inadequate. The administration did not necessarily request funding at levels where programs could achieve their goals because fisheries efforts had low priority compared to other programs in every President's agenda. For example, funds used for the boat subsidy program were less than half those authorized by the legislation, but even the authorized funding could not begin to replace the groundfish fleet.

The Second Era: Mid-1960s Through Late 1970s

During the early 1960s the nature of the problems the groundfish industry faced and government and industry perceptions of the problems

began to change. Foreign fleets arrived in large numbers to fish the offshore grounds. The foreigners had enormous modern vessels that harvested large quantities of fish.

Changes in Diagnoses of the Problems

Industry and government views about causes of the problems of the groundfish industry, which still suffered from very low revenues, evolved slowly. Industry spokesmen had talked for many years about foreign competition. They had always meant competition with imported products for the domestic market. By the mid-1960s they also meant competition with the big, modern foreign vessels on the fishing grounds. For some years they stated that foreign vessels outfished the domestic fleet but commented much less often that foreign fleets were severely depleting the resources. Fishing industry leaders hung on to the old explanation of problems for a long time. One reason they did so was that even someone looking for evidence that supported a new point of view would have had trouble getting information. The scientists involved with the International Commission for the Northwest Atlantic Fisheries had difficulty determining in the early 1960s what was happening to the fish stocks and what exactly foreign fleets were harvesting.

In addition, the leaders who communicated the causes of problems to Congress and to administrators had considerable stake in the old definitions which would have made perception of new information more difficult.

Through the 1950s and early 1960s they had built their political constituencies around the old assessments of the problems. They had invested years of organizational and political work in getting government to do something about those problems. Their work had resulted in several aid programs which indicated their own success and effectiveness and which were financially important to many industry people. These programs no longer made sense with a new definition of the problems. Indeed, as the assessment of the problems evolved among industry spokesmen, the diagnoses changed in ways that preserved the legitimacy of the aid programs as long as possible. Originally, the industry spokesmen had argued that they needed vessel subsidy programs to reduce costs to make their product competitive with imported fish; by the late 1960s they needed the vessel subsidy programs to help the industry construct new boats which could outfish the Russian vessels.

Government officials' interpretations of the nature of the fishing industry problems changed as well during the 1960s. Government representatives adopted a variant of the industry view. As the foreign fleets fished on the offshore banks, congressmen noted the differences between the fishing technology of the Soviet Union and the United States. They observed also that the United States had fallen from second to fifth place as a world producer of fishery products between the mid-1950s and the mid-1960s. For many congressmen, the fishing industry problem became the question of how the United States could regain pre-eminence

as a world fishing power. Fishing industry spokesmen played on congressmen's sensitivity to U. S. stature as a fishing nation in order to get programs they wanted.

Partly as a result of these new perceptions of the fishing industry's problems, Congress renewed and expanded the vessel construction subsidy program. Once the subsidy program was in place, congressmen pressured the Bureau of Commercial Fisheries and the Maritime Administration to direct the subsidy money to vessels which would demonstrate that the U. S. could again become a leader among the world's fishing nations. Therefore, the Bureau of Commercial Fisheries put one year's entire subsidy, $6 million, into construction of "Seafreeze Atlantic" and "Seafreeze Pacific." Groundfish industry representatives and others from the New England industry had opposed the construction of the two big processing-fishing vessels because no subsidy funds remained for the boats they wanted to build. "Seafreeze Atlantic" fished for a short time out of New England ports, but few trips broke even, and the boats stopped fishing within a few years. Not only had "Seafreeze" not addressed problems of the New England fleet, but it conflicted with basic traditions in the fisheries. Crewmen objected to the low, fixed salaries and to the months' long trips into the severe climate of the far north Atlantic. The vessel had trouble getting any crew, and entire crews resigned whenever the vessel came into port.

New Problems and New Explanations for Problems

By the early 1970s the problems the groundfish industry faced had changed. Boats made profits, and crewmen earned more than they ever had. Many factors contributed to the new prosperity. Demand gradually shifted upward as tastes changed in favor of fish with its advantages of low cholesterol. Rising incomes and increasing prices of meat and poultry added to the demand for fish. While demand shifted upward, the supply of fish decreased. The depleted stocks yielded less groundfish than ever before; and as fishermen tried to harvest more, they landed even less. The problems the New England groundfish industry spokesmen sought to explain were no longer low incomes. Rather, boat owners, fishermen, and processors were afraid that their prosperity was fragile; they hesitated to invest in new boats, they said.

Congressmen and state representatives did not realize as quickly as those in the industry that the problems of the groundfishery had changed. As late as the mid-1970s they still spoke of the economic hardships the fishing industry faced. For the most part, industry testimony did not refute the elected officials' statements. If congressmen believed the industry had hardships, they could continue to do so; for they might be more sympathetic to appeals for help. In contrast, in order to refute suggestions from the State Department that the fishing industry was doing so badly that it should be written off in favor of other interests, industry spokesmen and state fishery representatives pointed out that the industry's fortunes had improved tremendously and that fishing could provide even

more jobs and income if government took the appropriate steps.

By the late 1960s and early 1970s, even before groundfish fortunes improved, the industry, Congress, and government agencies concerned with the fishing industry had developed new explanations for the groundfish industry's problems. The foreign fleets were depleting the fish resources, industry spokesmen said. The foreigners threatened the existence of the New England industry because within a few years almost no fish might remain for fishermen to harvest. Congressmen agreed that the foreign fleets caused the industry's difficulties and stated that they were responsible for economic hardship in the fisheries. Officials from National Marine Fisheries Service added that while the foreign fleets were causing the particularly severe depletion, domestic fishermen contributed to the pressures on the fish resources, too.

A complete explanation of the causes of the new problems of the industry should, like the assessments from the National Oceanic and Atmospheric Administration and the National Marine Fisheries Service, have included more than the foreign fishing activity in the explanation of overfishing. The combined pressures of distant-water fishing nations, Canadians, and Americans were depleting the groundfish and other resources on which New England fishermen depended. As long as anyone could enter the industry and anyone could fish, the possibility of such depletion existed if prices and profits were high enough to attract additional boats and fishermen into the industry. While New England and Canadian fishermen had not depleted the resources before the foreign

fleets arrived, they could certainly do so after the foreigners departed if demand for fish were high enough; from the early 1970s on, demand appeared to be quite high.

Fishermen and boat owners in the New England industry did not believe that their own fishing effort could damage the resource. Only the foreigners with their large numbers of modern boats, their small mesh nets, and their midwater trawls could overfish the resource, they argued. Forces of supply and demand, they said, would keep the New England industry from overfishing.

While fishermen told Congress and agency officials this version of the story, other forces contributed to the formation of the agency views. Through the 1950s and 1960s the Fish and Wildlife Service and its successors, first the Bureau of Commercial Fisheries and later the National Marine Fisheries Service, had allied with the industry in the push for aid programs. Now, however, arguments centered around condition of the fish stocks, a matter of great concern and the area of greatest scientific expertise of the large staff of biologists. Even when the fish resources had seemed reasonably plentiful, the biologists had worried about depletion. In the late 1960s the Bureau of Commercial Fisheries set up an office of fishery economics. Economists added their support to arguments that all fishing nations contributed to the depletion problems and to the misallocation of labor and capital. Fishery biologists in important positions in the states' offices of marine fisheries agreed

with the NMFS biologists. The scientists' views about the causes of problems might have had little effect on policy towards the fishing industry, but more powerful groups supported the same measures to solve the problems although they did so for other reasons. The support of those groups gave more weight to the scientists' voices.

Efforts to Solve the Problems

The solution to their problems, New England fishing interests believed, was to exclude foreigners from the fishing grounds. Ideally, they wanted legislation from Congress to evict the foreigners. When that was not possible, from the late 1960s through the early 1970s, fishing industry representatives worked to exclude or restrict foreign fishing activity through the International Commission for the Northwest Atlantic Fisheries and the Conference on the Law of the Sea. By the early 1970s ICNAF had demonstrated its ineffectiveness in controlling fishing effort, and the Law of the Sea conference had failed to reach accord on a package of draft agreements that included fishery jurisdiction. The only solution that remained, fishing interests believed, was to exclude foreigners from the fishing grounds by unilateral action.

Many in Congress sympathized with this view by the early 1970s, but other interests opposed such action and influenced the positions of a large number of congressmen. In order to get legislation that restricted

the foreigners' fishing, industry spokesmen and their congressional supporters realized, provisions for the management of the domestic industry would be necessary.

The administration, reflecting State Department views, opposed any U.S. move to extend fishery jurisdiction. State Department officials believed extension of fishery jurisdiction would jeopardize the negotiations at the Conference on the Law of the Sea and would violate international law. Extension of fishery jurisdiction became somewhat palatable, however, if it conformed to the working agreements at the Law of the Sea meetings and if it contained management provisions that applied to domestic as well as foreign fishing. The National Marine Fisheries Service and the National Oceanic and Atmospheric Administration wanted domestic fishery management even without controls on the foreign fishermen; management provisions in the legislation weakened their opposition to the bills. Conservation groups who allied with the fishing industry in support of extension of fishery jurisdiction did not want to see the domestic industry continue to devastate the resources. State fishery directors, working to set up management programs for the resources within the three miles of state jurisdiction, wanted to see authority for management of the stocks outside three miles. Without that authority and without restrictions on the foreigners, fishermen were even more likely to resist state regulation. Experts in fishery biology, economics, and politics gained the attention of some congressional staff and some congressmen as they argued for

domestic fishery management. Many of the industry's strongest congressional supporters stated that they favored management for the academic reasons even before the necessity for political compromise that included management provisions became obvious.

Fishing industry representatives realized that without fishery management provisions they would not get extension of fishery jurisdiction to 200 miles or the exclusion of foreign fishermen. They would have preferred not to have management in the legislation, and they pressured to get extension of jurisdiction first and to deal with management provisions in subsequent legislation. However, they went along with the management proposals in the end for several reasons. After the foreign fleets were gone, they reasoned, there would be no need for management provisions to affect the domestic fishermen. Perhaps eventually, as the domestic fleet rebuilt, management would constrain fishing activity, but certainly not for a while. In addition, fishing representatives set out to ensure industry control of the management process. They succeeded in getting management placed in the hands of new regional councils dominated by representatives from the fishing industry.

The result of these pressures was the Fishery Conservation and Management Act of 1976 which extended fishery jurisdiction to 200 miles and allowed foreign fishing only when domestic fishermen could not harvest the "optimum yield" from the stocks. The law made possible solutions which the complete explanation of the source of industry problems suggested. Open access to the fisheries would lead to overinvestment

and, if demand were high enough, to depletion of the fish stocks, that explanation stated. Therefore, management of all fishing activity was important, and the best types of controls touched the root of the problem by limiting access to the fisheries.

The Era of Fishery Management

The Fishery Conservation and Management Act successfully controlled foreign fishing activity off the coast, the causes of overfishing, in New England fishermen's opinion. The law brought new troubles, however, which fishermen had not expected. In part, difficulties remained because foreigners were not the sole cause of depletion problems.

By mid-1979 it was clear that the management efforts were not conserving the groundfish resource. Fishing levels were consistently far above those that biologists recommended for stabilizing the fish stocks. Management also appeared to have little effect on entry of fishermen and boats into the fishery. Additional boats turned to the harvest of groundfish in unprecedented numbers in a very short time. When fishermen and boat owners protested to the Council that management procedures hurt their incomes, a condition that might hinder new entry, the protests resulted in changes in the regulations to relieve the problems they described. In addition, many fishermen and boat owners found that most of the time they could continue to fish as they wished because the rules went virtually unenforced and because they could find loopholes that allowed them to fish as heavily as without the regulations. Incomes in the

groundfish industry climbed even higher as the foreign fishermen departed. By the end of two years, the management of groundfish resources was in shambles. Regulations had little coherence or rationale, and the members of the New England Fishery Management Council seemed at a loss as to how to proceed to solve the difficulties of management. The 200-mile limit--the solution to the problems of foreign fishing--was causing so many problems, in the view of those in the industry, that many claimed they had been better off with the Russians fishing the grounds.

Industry and Government Assessments of the Problem and Solutions

Contrary to what fishing spokesmen had expected, fishery management placed restrictions on fishermen's activity immediately because New England and Canadian fishing pressures, biologists stated, could easily deplete the stocks even more. Fishermen objected to the regulations. There was too much government intervention in their work, they protested. New England fishermen should have been left alone to use the fish resources after the foreigners' departure, and scientists should have allowed several years to assess the effects on the fish stocks. Fishermen said that supply and demand would keep them from overfishing. When one specie became less plentiful, they would fish more heavily on another instead. The industry protested that management threatened their incomes and their way of life. The solution to this problem was for the Council and the federal government to leave the industry alone.

Congress, pressured by the fishing industry, considered amendments to the 200-mile limit legislation in committee. Congress agreed with the industry that the legislation had flaws, but few congressmen felt strongly enough to want to amend the law. Rather than taking a legislative route to solving problems of fishery management, congressmen were inclined to pass on the industry protests to the National Marine Fisheries Service, the National Oceanic and Atmospheric Administration, and the New England Fishery Management Council.

The Council members held strong views about the sources of the problems of fishery management. One group of Council members believed that management could achieve goals of conserving fish and maximizing industry welfare. They felt fishery management was important in reaching such goals and that the Council could manage the fishery better than it had. Many of those members had ideas about how management should work but had considerable trouble getting such measures adopted. Another group of Council members agreed with the fishermen, boat owners, and dealers that fishery management was unnecessary. Management was principally a way to create jobs for bureaucrats and to add to the power of government over people's lives. Those members sought ways to minimize the effects of management on fishermen and to adopt rules that were most favorable to their specific interest groups.

In the opinion of the staff of NOAA and NMFS, the Council was the source of problems. The Council did not know how to manage the fisheries and was too sensitive to industry opinion, NOAA and NMFS officials

believed. Work on groundfish management had been haphazard and irrational. Many administrators sought to take the fishery management authority away from the Council and to place it in NOAA and NMFS. Their efforts grew not only out of their views about the shortcomings of Council management but also out of a desire to accrue responsibility and power for themselves.

An Alternative View of the Problem and Possible Solutions

The industry did in fact face serious problems. These were much the same as those they had faced as the foreign fleets fished the offshore grounds. By 1979 the Fishery Conservation and Management Act had provided only a partial solution to those problems. Entry into the fisheries had been limited for foreigners. However, the New England fleet put more and more pressures on the resources and threatened the fish stocks with even greater depletion. Too many boats were coming into the groundfish industry. If steps were not taken to slow or stop the influx and the overfishing, then new fishermen and boats would continue to come into the fisheries until costs were so high and boats harvested so few fish that vessel owners earned profits that were not high enough to make it worthwhile for them to stay in the risky business. Then any downward shift in demand would put the industry back into the predicament of the 1950s and 1960s when boats could not break even, wages were extremely low, and fishermen and boats were stuck in the industry for many years. Even if investment did not proceed quite so far or demand did not shift downward,

badly depleted fish stocks fluctuated greatly in size. In years when the condition of the resource was particularly poor, many fishermen would not be able to earn enough revenue to meet the costs of harvesting the fish.

From the perspective of the entire economy, fishery management was failing to solve problems, but no one spoke for those broader interests. If fewer fishermen and boats worked in the industry, the resource would eventually yield much larger harvests. In the meantime, many fishermen and capital resources could produce more in other parts of the economy.

Even from the perspective of the fishing industry, however, new measures were necessary to solve the problems and to prevent greater difficulties, if this assessment of the problem were correct. Fishery management needed to address the character of unlimited access to the fisheries which would lead to economic problems for the industry and to severe depletion of the fish resources. Efforts to restrict the amount of fish which fishermen landed had not succeeded in stemming the entry of boats and fishermen effectively. If the Council wished, it could recommend measures that directly limited entry to the fisheries. Limited entry programs could work in innumerable ways, and the Council could consider the forms of limited entry that would have the most equitable effects and which seemed most satisfactory to those in the industry. By 1979 the Council had already considered limiting the number of licenses which allowed boats to fish for haddock, cod, yellowtail flounder, and redfish.

The majority of Council members had rejected the proposals. Most fishermen opposed such a direction, and the Council members were not willing to accept the political and economic costs of adopting it.

Any limited entry program would face problems. The Council had very little economic and social information with which to monitor the effects of their actions. Even more important, many on the Council opposed limited entry, in part because of the very strong opposition of their constituents. Council members who wanted to consider limited entry needed to find ways to persuade other members and those in the industry that the advantages of limiting entry could be greater than the disadvantages and that many of the problems which opponents foresaw could be resolved in the program's design and administration.

One way to limit entry less directly than restricting the number of licenses would be to pay fishermen to fish for underutilized species if they moved out of the groundfishery. The leader of one fishermen's organization had suggested that fishermen earn a bonus on the price of underutilized species and be taxed on groundfish landings. Using the development of underutilized species as a fishery management tool would require the cooperation of NMFS and the Fishery Management Council. The proposed plan was not developed although in 1978 and 1979 National Marine Fisheries Service set up programs to encourage the use of underutilized species. They researched overseas markets and provided the information to the industry. They encouraged work on the technological problems of harvesting, handling, and processing some of the underutilized

species; but more research was needed to learn about ways to assure that the product was still edible when it arrived at the dock or after it had been processed.

Any such effort involved complications and difficulties, but the Council and NMFS needed to begin to work out the problems. In NMFS the success of such efforts would depend on the effectiveness of those who were dedicated to reasonable, equitable management regardless of whether it was controlled by NMFS or the Council. They could make the crucial co-operation with the Council possible.

Government Efforts to Help the Fishing Industry Out of Troubles

As this review shows, government efforts to help the fishing industry have been unsuccessful for many reasons. The industry rarely understood all the aspects of the problems it faced. The diagnoses it communicated to Congress were incorrect as well, and sometimes after their translation by Congress, the diagnoses became more inaccurate. As a result, solutions to the problems were inadequate or could harm the industry even more. Even when the solutions were correct, in the case of fishery management, difficulties in resolving the political opposition which stemmed in part from incorrect assessments of the problem prevented programs from working properly. Unless the fishery management program addressed the roots of the problems more satisfactorily, the industry faced the prospect of very difficult economic conditions once again. Nevertheless, the presence of the Council offered hope that mistakes might not be so bad in

the future. At least the Council provided a forum for communication between the fishing industry and government agencies which had never existed. Many problems could be handled through Council-NMFS action rather than through congressional intervention with all the distortions in assessments of problems and selections of solutions which that involved.

Government efforts to help the fishing industry are surprising for their virtually complete failure and for the threat that incorrectly conceived programs posed for the industry. The groundfish industry experience suggests that government intervention in the fortunes of troubled industry may be more difficult than most industry representatives or government officials believe. Such government efforts seem to require more information and analysis to identify the causes of problems and the best solutions and more monitoring of programs to smooth implementation than occurred in the case of the fishing industry. Correct assessments of problems need to be linked more closely than in the fisheries' history to the choice of solutions and to the implementation of programs to assure that government efforts are more likely to produce favorable economic development results.

NOTES

CHAPTER 1

INTRODUCTION

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CHAPTER 2

STRUCTURE AND PROBLEMS OF THE FISHERIES

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[3]U.S., Congress, House of Representatives, Hearings before the Subcommittee of the Committee on Banking and Currency, "To Provide Loans Through Reconstruction Finance Corporation," 73rd Cong., 2d sess., Feb.-March 1934, p. 116.

[4]"Statement Setting Forth Serious Situation Confronting Fishermen, Captains, and Vessel Owners at the Port of Gloucester, Massachusetts," presented by fishermen and captains who traveled to Washington on the Gloucester schooner, "Gertrude L. Thebaud," 1933 (files of the Gloucester Fisheries Commission).

[5]U.S., Congress, House of Representatives, Hearings before the Committee on Merchant Marine, Radio, and Fisheries, "Rehabilitation of the Fishing Industry," 73rd Cong., 2nd sess., Feb.-March 1934, pp. 5-20.

[6]A gillnet is a net suspended in water usually within a few miles of shore. Floats at the top and weights at the bottom keep the net perpendicular to the bottom. Fish swim into the net and are caught in the mesh. If they try to back out, the net catches around the gills--thus the name gillnet. The fisherman pulls the net in after a period of time, a few hours or a day, takes the fish, and resets the net.

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[11]Sixteenth Census, Vol. III, "The Labor Force," Table 16.

[12]White, pp. 33-34; "Good Fishing," Business Week, Dec. 6, 1941, p. 58; J.F. Coggswell, "Three Billion Little Fishes! Record Maine Pack," Saturday Evening Post, 215 (Jan. 16, 1943), pp. 16-17+.

[13]"Fishing Troubles," Time, 40:4 (July 27, 1942), p. 71; "Changes in New England Fishing Fleet, 1940-44: The Result of an Independent Survey by the Editor of Atlantic Fisherman," Atlantic Fisherman, 25:7 (Aug. 1944), p. 21; Fishing Masters' Association, "Official Yearbook of the Fishing Masters' Association," Boston, Mass., 1941; Marc A. Rose, "Fishing Is a War Job, Too," Reader's Digest, 42:249 (Jan. 1943), p. 55; Eldon E. Lindsey, "Wanted, More Fishing Boats," Christian Science Monitor Weekly Magazine, March 13, 1943, p. 15.

[14]Historical Statistics of the United States, Series L236-253; Federal Trade Commission, Report of the Federal Trade Commission on Distribution Methods and Costs, "Part VIII. Cost of Production and Distribution of Fish in New England" (Washington, D.C.: GPO, 1945), p. 36; John Gould, "Maine Busy Canning Fish," New York Times Magazine, Nov. 22, 1942, p. 28.

[15]Rose, p. 55; "The Seafood Boom," Time, 41:16 (April 19, 1943), pp. 81-82; "Fish Are Fewer," Business Week, Aug. 14, 1943, p. 38.

[16]"Massachusetts Production Shows Big Increase in Value," Atlantic Fisherman, 23:12 (Jan. 1943), p. 13; Sixteenth Census, Vol. III, "The Labor Force," Table 16; Federal Trade Commission, pp. 97-100; "Kettle of Fish: OPA Is Caught Between the Devil and the Deep Blue Sea," Business Week, Dec. 16, 1944, p. 40; U.S., Congress, House of Representatives, Executive Hearings before Subcommittee on Fisheries of the Committee on Merchant Marine and Fisheries, "Manpower Shortage

in the Fishing Industry," 78th Cong., 2d sess., Mar., May 1944; Pearl Strachan, "The Fish Story Down East in Time of War," Christian Science Monitor Weekly Magazine, Feb. 20, 1943, p. 5. One of the reasons that stories of spectacular earnings could not tell the whole tale was that fishermen did not work all the time. In 1944 the union, dealers, and vessel owners appealed to the House Committee on Merchant Marine and Fisheries to designate fishing a critical industry so workers would be exempted from the draft. However, in Boston the union supervised the rotation of crews on vessels because one-third more fishermen sought work than could have places on boats at any one time. Work on a small dragger was seasonal because the boats were too small to survive stormy weather; fishermen probably increased their incomes by working on other jobs. Fishermen on smaller boats had to depend on fish in inshore areas. When fish came inshore, the fishermen earned a great deal; but when they could not find fish they had periods of low earnings.

[17]"Kettle of Fish," Business Week, April 29, 1944, pp. 53-54; "Fish Are Fewer," p. 38; "OPA Needs Better Understanding of Fisheries," Atlantic Fisherman, 24:11 (Dec. 1943), pp. 9, 28.

[18]White, pp. 31, 34, 26.

[19]"Changes in the New England Fishing Fleet 1940-44"; Fishing Masters' Association, 1941.

[20]"The Future of Lobstermen," Atlantic Fisherman, 26:7 (Aug. 1945), p. 7; "Popularity of Frozen Foods Will Increase Fish Demand," Atlantic Fisherman, 26:11 (Dec. 1945), p. 23. In 1945 per capita consumption of fish was 9.9 pounds compared to about 170 pounds of meat and poultry. By 1965 consumption of fish was 10.8 pounds per capita. (U.S., Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Fisheries of the United States, 1977, CFS No. 7500, April 1978, pp. 71-72; Historical Statistics of the United States, Series G882-884, G910).

[21]Fred Lardner, "Report from Washington," Atlantic Fisherman, 26:5 (June 1945), p. 40.

[22]"The Future of Lobstermen," p. 7; Fred Lardner, "Washington Wants to Increase Fish Production," Atlantic Fisherman, 26:4 (May 1945), p. 23; "Good Quality Now Will Insure Post-War Market," Atlantic Fisherman, 24:12 (Jan. 1944), p. 7.

[23]Bob Rose, statement at special meeting of New England Fishery Management Council, Nov. 21, 1977, Peabody, Massachusetts.

[24]Like any typology, the inshore and offshore division oversimplifies the character of the industry. Some medium-sized boats share some features of each group. In ports where both inshore and offshore boats work, those in the industry sometimes see boats' character in a continuum from smallest to largest, with few clear divisions.

[25]The discussion in this section relies heavily on testimony by inshore fishermen at the New England Fishery Management Council, on conversations with inshore fishermen at those meetings and in Chatham, Massachusetts, and on the notes from interviews with fishermen by Mary Lord, Julia Wondolleck, and Meta Cushing. Other sources are noted.

[26]U.S., Department of the Interior, Fish and Wildlife Service, Fishery Statistics of the United States, Statistical Digests 19, 27 (1946, 1950); U.S., Department of the Interior, Bureau of Commercial Fisheries, Fishery Statistics of the United States, Statistical Digests 53, 60 (1960, 1965); Fishing Masters' Association, 1950; International Commission for the Northwest Atlantic Fisheries (hereafter ICNAF), "List of Vessels over 50 Gross Tons Fishing in the ICNAF Convention Area in 1959," Dartmouth, Nova Scotia, Canada, Nov. 1960; ICNAF, "List of Fishing Vessels and Summary of Fishing Effort in the ICNAF Convention Area, 1965," Dartmouth, Nova Scotia, Canada, Jan. 1967. The numbers of boats should be considered approximate and probably quite unreliable. No method existed for registering boats less than five tons, and it could be extremely difficult to distinguish correctly between sportfishermen and commercial fishermen or between part-timers and those who fished more seriously.

[27]Fishery Statistics of the United States, 1946, 1950, 1960, 1965; Fishing Masters' Association, 1950; ICNAF, "List of Vessels . . . 1959"; ICNAF, "List of Fishing Vessels . . . 1965."

[28]Fishery Statistics of the United States, 1946, 1950, 1960, 1965; Fishing Masters' Association, 1950; ICNAF, "List of Vessels . . . 1959"; ICNAF, "List of Fishing Vessels . . . 1965." Fishery Statistics of the United States gives the number of fishermen working on boats smaller than five tons. The number of fishermen on boats five to sixty gross tons is an estimate assuming between three and four men per boat.

[29]Statements at New England Fishery Management Council meetings and by fishermen from Chatham, Massachusetts. See also Ellery Thompson's account of narrow escape in a storm in his autobiography, Draggerman's Haul (New York: Viking Press, 1950), pp. 143-150.

[30]Phil Schwind, Cape Cod Fisherman (Camden, Maine: International Marine Publishing Co., 1974); Thompson, p. 89; "6 to 1, It's Chathams," Boston Globe, June 22, 1977, p. 3; Margaret Dewar, Ronald Lake, Mary Lord, Deborah Wishner, Julia Wondolleck, "The Fishing Industry of Chatham and Its Importance to the Town" (Department of Urban Studies and Planning, Massachusetts Institute of Technology, Cambridge, Mass., Aug. 1978), pp. 51, 54.

[31]Schwind; Harold B. Clifford, Charlie York: Maine Coast Fisherman (Camden, Maine: International Marine Publishing Co., 1974).

[32]Mary Breslauer, "Ah, the Fisherman's Life--Boom or Bust and Ernie's Cooking," Vineyard Gazette, June 21, 1977, pp. 1, 7; Ted Van Winkle, Fred Boynton: Lobsterman, New Harbor, Maine (Camden, Me.: International Marine Publishing Co., 1975), pages unnumbered.

[33]Kim Bartlett, The Finest Kind: The Fishermen of Gloucester (New York: W.W. Norton, 1977), p. 44.

[34]"Loran" is an acronym for "long range navigation." It is a navigation aid which shows a captain his exact location on the ocean based on signals received from shore stations.

[35]In Chatham, Mass., for instance, the "mosquito fleet," very small boats, operate without electronic equipment while nearly all of the larger boats (25 to 35 feet long) have acquired such equipment in the last few years.

[36]William Ronco, "Case Study of the Chatham Seafood Cooperative" (Center for Community Economic Development, Cambridge, Mass., Feb. 1978); Lord, interviews with Chatham fishermen, 1978-79.

[37]Schwind; Van Winkle; Thompson; Cushing and Lord, interviews with Chatham and Gloucester fishermen, 1978-79.

[38]Schwind; "Are Women Up to Fishing?" Gloucester Daily Times, Feb. 3, 1978, p. 13; John J. Poggie, Jr., and Carl Gersuny, Fishermen of Galilee, Marine Bulletin Series, No. 17, University of Rhode Island, Kingston, R.I., 1974, chap. 6; M. Estellie Smith, "Comments on the Heuristic Utility of Maritime Anthropology," The Maritime Anthropologist, 1:1 (summer 1977), pp. 2-5, 8.

[39]For a discussion of how these factors affect the distribution of many species, see Edward A. Ackerman, New England's Fishing Industry (Chicago, Ill.: University of Chicago Press, 1941), chaps. 2, 3.

[40]Van Winkle; "Monhegan Maintains Her Traditional Aura," National Fisherman, 53:5 (Sept. 1972), p. 19C; Francis Bowles, Woods Hole Oceanographic Institution, personal communication, 1977; Lord, interviews with Chatham fishermen, 1978-79.

[41]Schools of fish run into the "leaders" of the weir--fence-like structures of brush or netting--and change direction to follow the leader into the "pocket"--an inclosure of brush or netting from which fish can rarely escape. Fishermen extend the fine mesh nets of the stop seines across openings to inlets after herring enter to prevent them from escaping to the ocean.

[42]Fishery Statistics of the United States, 1950-1965; Leslie W. Scattergood, "Maine's Herring Fishery," Atlantic Fisherman, 33:1 (Feb. 1952), pp. 16ff.; "Hub of Knox County's Progressive Fishing Industry--Rockland: Host to the 13th Annual Maine Seafoods Festival," National Fisherman, 40:3 (July 1959), pp. 19ff.; Bernard E. Skud, "Scientists Answer Questions on Herring Seining," National Fisherman, 43:1 (May 1962), pp. 3ff.; E.L. Boutilier, "Night Haul: Maine Men Hold the Purse Strings," National Fisherman, 43:1 (May 1962), p. 5.

[43]Charles H. Lyles, "Historical Catch Statistics (New England States)," Bureau of Commercial Fisheries, Fish and Wildlife Service, Department of Interior, CFS 4145, April 1967; Fishery Statistics of the United States, 1945-1965; Ronald W. Green, "Erratic Maine Fishing Season Closes Near 1960 Level," National Fisherman, 42:10 (Feb. 1962), p. 2; James L. Warren, executive director, Maine Sardine Council, personal communication, Jan. 1978.

[44]Van Winkle; Ackerman, chapter 3; William B. Walker, "Trap Day," National Fisherman, 54:13 (April 30, 1974), pp. 50ff.

[45]Van Winkle; Mike Brown, "Lobstering Little Changed Over the Years," National Fisherman, 48:4 (Aug. 1967), p. 3B.

[46]"Historical Catch Statistics"; Fishery Statistics of the United States, 1945-1965.

[47]James M. Acheson, "Territories of the Lobstermen," Natural History, 81:3 (April 1972), pp. 60-69; Francis P. Bowles, "Natural Regulation of an Island Fishing Community," doctoral dissertation, Harvard University, 1973; Van Winkle, on Monhegan Island; "Better Conservation Methods Are Sought by Lobstermen's Association in Maine," National Fisherman, 36:10 (Feb. 1956), p. 16; Reed Howland, "Mass. Inshore Lobstermen Pushing for Double Gauge over Opposition," National Fisherman, 44:11 (Mar. 1964), p. 3; "Maine Fishermen Concerned Over Dragging for Lobsters," National Fisherman, 35:5 (Sept. 1954), p. 20; "Maine Lobstermen Would Ban Lobster Dragging," National Fisherman, 39:9 (Jan. 1959), p. 18; "Maine Lobstermen's Group Completes Organization," National Fisherman, 35:7 (Nov. 1954), p. 28; Ackerman, chapter 5; A.M. Huq, "Socio-Economic Factors to Be Considered in Implementing Limited Entry--A Case Study, the Northern Lobster Fishery," paper presented at International Symposium on Fisheries Economics, sponsored by OECD, Nov. 29-Dec. 3, 1971; "Lobstermen Air Views on Key Problems," National Fisherman, 42:4 (Aug. 1961), pp. 20ff.

[48]Fishery Statistics of the United States, 1945-1965; "Historical Catch Statistics"; Leslie W. Scattergood, "The Northern Shrimp Fishery of Maine," Commercial Fisheries Review, 14:1 (Jan. 1952), pp. 1-15; Maine Department of Sea and Shore Fisheries, "Harvesters of the Sea: the Story of Maine's Commercial Fisheries," Augusta, Me., 1971, pp. 18-21; Van Winkle; Robert L. Dow, "Fluctuations in Maine Shrimp Landings," Commercial Fisheries Review, 25:4 (April 1963), pp. 5-6. The shrimp fishery collapsed again in the mid-1970s. By 1979 state officials agreed to allow shrimping for only a few weeks.

[49]"Historical Catch Statistics"; Fishery Statistics of the United States, 1945-1965; John J. O'Brien, "New England Whiting Fishery and Marketing of Whiting Products, 1946-61," Bureau of Commercial Fisheries, Market News Service, Boston, Mass., Dec. 1962; Raymond L. Fritz, "A Review of the Atlantic Coast Whiting Fishery," Commercial Fisheries Review, 22:11 (Nov. 1960), pp. 1-11; Tom V. Binmore, "Whiting Fishery Boon to Smaller Inshore Boats: Help Needed If Industry to Realize Gains," National Fisherman, 44:6 (Oct. 1963), p. 5; Lyman Owen, "Small Draggers Live Off Whiting in Summer," National Fisherman, 49:4 (Aug. 1968), p. 2B; "Gloucester Men Plan Action Against Maine Whiting Moves," National Fisherman, 40:7 (Nov. 1959), pp. 15-16.

[50]Albert C. Jensen and Robert K. Brigham, "Line-Trawl Fishery for Cod and Haddock at Chatham, Mass.," Commercial Fisheries Review, 25:6 (June 1963), pp. 14-19; Ackerman, chap. 4; "6 to 1, It's Chathams"; Dewar, et al., pp. 33-34.

[51]Ackerman, chapter 4; Kathleen McCarthy and Jeff Serotkin, "Chased from Lobstering, Shrimping, Dragging, N.H. Man Tries Gillnetting," National Fisherman, 53:6 (Oct. 1972), p. 26; Peter K. Prybot, "Once-Busy Gillnet Art Fading from the Scene in Gloucester," National Fisherman, 57:1 (May 1976), p. 4B; "Fishing Vessel and Gear Developments, Equipment Note No. 5--Sink Gill-Net Fishing in New England," Commercial Fisheries Review, 22:11 (Nov. 1960), pp. 16-19.

[52]Ackerman, pp. 140-141; Tim Sullivan, "Fishermen's 'Inshore' War," Gloucester Daily Times, Nov. 30, 1977, p. 1; Dick Souther, "Inshore Dragging Remains Massachusetts Controversy: Yellowtail and Gear Loss Are Chief Concerns," National Fisherman, 56:1 (May 1975), p. 16A; John J. O'Brien, "Landings and Market Prices of Fishery Products, Boston Fish Pier, 1949," Bureau of Commercial Fisheries, Market News Service, Boston, Mass., p. 8; "Cape Cod Fishermen Attend Hearing on Year-Round Dragging Proposal," National Fisherman, 39:11 (March 1959), p. 14; "Confer on Three-Mile Limit," National Fisherman, 40:1 (May 1959), p. 20; Commonwealth of Massachusetts, "Special Report of the Department of Natural Resources Relative to Restricting the Use of Beam or Otter Trawls . . .," House, No. 3703, under Chapter 43 of the Resolves of 1963, Jan. 1964.

[53]Tabulations of trip data for 1965, Northeast Fisheries Center, National Marine Fisheries Service, Woods Hole, Mass. All tabulations from trip data are landings by boats under fifty gross tons, rather than the sixty gross tons, defined here as the distinction between inshore and offshore boats. National Marine Fisheries Service codes data for vessel size groups with no division at sixty gross tons.

[54]Fishery Statistics of the United States, 1965; tabulations of trip data for 1965 for vessels under fifty gross tons, Northeast Fisheries Center; Tom V. Binmore, "Sea Scallops Win Top Spot Through Organization," National Fisherman, 42:3 (July 1961), p. 10; "Scallops Gain in Popularity; Higher Prices Pose Challenge," National Fisherman, 66:4 (Aug. 1965), p. 50; Schwind, chap. 19.

[55]"The Southern New England Fisheries," National Fisherman, 39:12 (April 1959), pp. 18ff.; Charles Buffum, "Rhode Island's Trappers . . . and Their Lunch Box Fishery," National Fisherman, 47:7 (Nov. 1966), pp. 12A ff.; "Simplicity and Skill Keep Stonington Dragger Going," National Fisherman, 49:4 (Aug. 1968), p. 3B; Stephen B. Olsen and David K. Stevenson, "Commercial Marine Fish and Fisheries of Rhode Island," Marine Technical Report 34, University of Rhode Island, Coastal Resources Center, Kingston, R.I., 1975; Jim Gibson, "Rhode Island Fish Trapping '71," National Fisherman, 52:13 (April 30, 1972), p. 84; Dewar, et al., pp. 38-39.

[56]George W. Snow, "Development of Trash Fishery at New Bedford, Massachusetts," Commercial Fisheries Review, 12:7 (July 1950), pp. 8ff.; Robert L. Edwards, "Gloucester's Trawl Fishery for Industrial Fish," Commercial Fisheries Review, 20:8 (Aug. 1958), pp. 10ff.; Robert L. Edwards and Fred E. Lux, "New England's Industrial Fishery," Commercial Fisheries Review, 20:5 (May 1958), pp. 1ff.; Olsen and Stevenson, part 1; Robert A. Hall and Henry R. McAvoy, "New England Fisheries--Annual Summary, 1963," Market News Service, Bureau of Commercial Fisheries, Boston, Mass., p. 40.

[57]John Ward, "Quahoggers Are Hard-Working, Independent Lot," National Fisherman, 48:4 (Aug. 1967), p. 6B; Lennox F. Bodman, "Fisherman Describes Gear, Methods Used to Harvest Nantucket Scallops," National Fisherman, 46:3 (July 1965), p. 42; H.V.R. Palmer, "Scallops Are Major Fishery of Mass. Islands," National Fisherman, 56:11 (March 1976), p. 6B; "The Southern New England Fisheries," pp. 18ff.; Dewar, et al., pp. 7ff.

[58]"Historical Catch Statistics."

[59]Dan Arnold, executive director, Massachusetts Inshore Draggermen's Association, personal communication, Oct. 1978; Andreas A. Holmsen, "Remuneration Systems and Ownership Patterns in the Fishing Industry and Their Relation to Investment Decisions," University of Rhode Island, undated, p. 12, Historical Statistics of the United States, Series D740.

[60]Arnold; U.S., Congress, House of Representatives, Hearings before the Subcommittee on Fisheries and Wildlife Conservation of the Committee on Merchant Marine and Fisheries, "Fishing Rights" in "Miscellaneous Fisheries Legislation," 89th Cong., 2d sess., May-June 1966, p. 344; Lord, interviews with Chatham fishermen, 1978-79; Schwind, p. 224.

Of course, the fishermen who remain to offer this information are the ones who did not go out of business during the 1950s and 1960s so they may remember better conditions than a more balanced sample would.

[61]O'Brien, "New England Whiting Fishery . . . ," p. 2. On the other hand, fishermen in the inshore fisheries seemed particularly predisposed to feel that government should not bail anyone out. The absence of appeals for aid could reflect that sentiment rather than their well-being.

[62]The discussion that follows relies on testimony of offshore fishermen before the New England Fishery Management Council and conversations with offshore fishermen at those meetings, 1977-1979, and on interviews of Gloucester fishermen by Mary Lord and Meta Cushing, 1978-79.

[63]Fishery Statistics of the United States, 1945-1965; Fishing Masters' Association, 1946, 1950, 1951; ICNAF, "List of Vessels . . . 1959"; ICNAF, "List of Vessels over 50 Gross Tons Fishing in the ICNAF Convention Area in 1962," Dartmouth, Nova Scotia, Canada, Jan. 1964; ICNAF, "List of Fishing Vessels . . . 1965." Number of fishermen on offshore boats (over sixty gross tons) was estimated by assuming that three or four crewmen work on each boat between five and sixty gross tons, multiplying 3.5 times the number of these boats, and subtracting this number (the number of fishermen on inshore boats between five and sixty gross tons) from the total number of fishermen on vessels over five tons.

[64]See chapter 3.

[65]Fishing Masters' Association, 1950; Fishery Statistics of the United States, 1965.

[66]John Hoberman, personal communication, Jan. 1978; Charles R. Hitz, "Catalogue of the Soviet Fishing Fleet," National Fisherman, 48:13 (April 30, 1968), pp. 9ff.

[67]Ackerman, chapter 2; Stephen Olsen and Dale Brown, "Petroleum, Fisheries, and the Georges Bank Environment" in Fishing and Petroleum Interactions on Georges Bank, "Volume II: The Characteristics of the Two Industries, Potential Future Trends, and an Assessment of Foreseeable Conflicts," Energy Program Technical Report: 77-1, New England Regional Commission, 1977.

[68]Frederick L. Gaston and David A. Storey, "The Market for Fresh Fish that Originate from Boston Fish Pier Landings" in Frederick W. Bell and Jared E. Hazleton, eds., Recent Developments and Research in Fisheries Economics (Dobbs Ferry, N.Y.: Oceana Publications, 1967).

[69]David P. Jackson, "NF Signs on as Supercargo for Trip to Georges Bank," National Fisherman, 57:5 (Sept. 1976), p. 15B; Bartlett, part II; William B. Hamilton, "For Gloucestermen at Sea It's Life of Toil and Hardship," Boston Globe, Jan. 29, 1978; Charles Buffum, "Scalloping Is Mechanized But Still Tedious Work," National Fisherman, 48:4 (Aug. 1967), p. 4B; Frederick W. Bell, "The Relation of the Production Function to the Yield on Capital for the Fishing Industry" in Bell and Hazleton; Salvatore Comitini and David S. Huang, "A Study of Production and Factor Shares in the Halibut Fishing Industry," Journal of Political Economy, 75:4, pt. 1 (Aug. 1967), pp. 371-372; Leah J. Smith and Susan B. Peterson, "The New England Fishing Industry: A Basis for Management," Technical Report 77-57, Woods Hole Oceanographic Institution, Aug. 1977.

[70]"'Henry Underwood' Log Reveals Value of Radar," Atlantic Fisherman, 33:7 (Aug. 1952), p. 17; "Use of Loran as Navigational Aid," Atlantic Fisherman, 31:9 (Oct. 1950), pp. 14-15; James F. Hunt, "Loran Helps Fishermen to Return to an Invisible X on Empty Ocean," National Fisherman, 47:1 (May 1966), p. 1C; "Locating Fish with Echo Sounders," Atlantic Fisherman, 34:3 (April 1953), pp. 14, 28-29.

[71]"100' Steel Scalloper Pat-San-Marie is Third of Her Type for New Bedford," National Fisherman, 48:3 (July 1967), p. 20A; "Stern Trawler is Converted to Herring Seiner," National Fisherman, 49:3 (July 1968), p. 14B; ICNAF, "List of Vessels . . . 1959"; "Rigging for Scallop Fishing Is Expensive Job," National Fisherman, 48:10 (Feb. 1968), pp. 16A, 21A; see stories in National Fisherman, 1950-65; George Ross, vessel loan officer, National Marine Fisheries Service, Gloucester, Mass., personal communication, Sept. 1977; Susan B. Peterson and Ann Martin, "Fishing Gear Adaptability--The Uses of Data," Woods Hole Oceanographic Institution, 1978.

[72]ICNAF, "List of Vessels . . . 1959"; ICNAF, "List of Fishing Vessels . . . 1965"; Paul V. Mulkern, "Annual Earnings of Boston Fishermen in 1964," Bureau of Labor Statistics, Regional Report, Boston, Mass., Feb. 1966, p. 2; John J. O'Brien, "Landings and Prices of Fishery Products, Boston Fish Pier, 1956," Market News Service, Branch of Commercial Fisheries, Fish and Wildlife Service, Boston, Mass., p.v. By the late 1970s only six men worked on most offshore trawlers.

[73] John Jessen, anthropologist, New Bedford, Mass., personal communication, fall 1977; David Boeri and James Gibson, "Tell It Good-Bye, Kiddo": The Decline of the New England Offshore Fishery (Camden, Maine: International Marine Publishing, 1976), p. 26; White, p. 88; James D. Ackert, "Comment" on Morton M. Miller and Virgil J. Norton, "The Fishing Labor Force: Scarcity or Surplus?" in Bell and Hazleton; James D. Ackert, Gorton Corporation, Gloucester, Mass., personal communication, spring 1978; Virgil J. Norton and Morton M. Miller, "An Economic Study of the Boston Large-Trawler Labor Force," Circular 248, Bureau of Commercial Fisheries, Fish and Wildlife Service, Department of the Interior, Washington, D. C., May 1966, pp. 12-13; Cushing and Lord, interviews in Gloucester, 1978-79. In some ports fishermen tend to move around among boats more than in others (Leah J. Smith, Woods Hole Oceanographic Institution, personal communication, 1978).

[74] Jessen; Area Redevelopment Administration, Department of Commerce, "A Technical Study of the Scallop and Flounder Industry of New Bedford, Mass.," ARA, 1964, p. 10; Boeri and Gibson, p. 26.

[75] Another reason is that in ports except New Bedford in the 1950s and 1960s, a fisherman had only one choice of vessel type. He would have had to move to another port to get a different kind of job. A third reason is that fishermen establish personal contacts and earn reputations on a kind of vessel which get them more desirable sites. If they go to another kind of boat and gear, they may have to start at the bottom of the "job ladder" again.

[76] Bartlett, part II; Mulkern, pp. 2-3; Boeri and Gibson, chap. 2; Jackson; S. F. Manning, "Fishermen Weigh Benefits of Stern Trawling," National Fisherman, 44:11 (March 1964), pp. 8-9.

[77] Bartlett, part II; Mulkern, p. 2-3; Boeri and Gibson, chap. 2; Jackson; George F. Kelly, et al., "Redfish," Fishery Facts--1, National Marine Fisheries Service, National Oceanic and Atmospheric Administration, Department of Commerce (Seattle, Washington: NMFS, Oct. 1972); Cushing and Lord, interviews in Gloucester, 1978-79.

[78] Buffum, "Scalloping is Mechanized . . . ", pp. 4B, 5B; Marilyn A. Altobello, David A. Storey, Jon M. Conrad, "The Atlantic Sea Scallop Fishery: A Descriptive and Econometric Analysis," Research Bulletin No. 643, Massachusetts Agricultural Experiment Station, University of Massachusetts (Amherst, Mass., January 1977), p. 19; Binmore, "Sea Scallops Win Top Spot Through Organization," p. 10.

[79]Robert Kolbe, "Without Boats and Fish, A Fisherman Just Isn't," National Fisherman, 54:1 (May 1973), p. 28A; Bartlett, part II; Kolbe; John Christie, "Gloucester Fisherman Loses Arm at Sea, Regains Limb in Hospital," National Fisherman, 53:7 (Nov. 1972), p. 13A; Norton and Miller, pp. 19-21.

[80]White, chapter 5; Norton and Miller, pp. 29-30; notes on union agreements in O'Brien, et al., "Landings and Prices of Boston Fishery Products, Boston Fish Pier," various years; "Fishermen's Income Depends on Auction Outcome," National Fisherman, 45:4 (August 1964), p. 26.

[81]White, chapter 4; John J. O'Brien, "New England Sea Scallop Fishery and Marketing of Sea Scallop Meats, 1939-60," Market News Service, Bureau of Commercial Fisheries, Boston, Mass., Nov. 1961, p. 15; O'Brien, "New England Fisheries--Annual Summary 1966," pp. 17-18; articles in Gloucester Daily Times, September through October, 1966; Charles Buffum, "2-Week New Bedford Strike Ends; Problem of Fuel Cost Is Ironed Out," National Fisherman, 48:3 (July 1967), pp. 3A, 21A; O'Brien, "New England Fisheries--Annual Summary 1967," p. 20.

[82]White, chapter 5; Thomas J. Risoli, "Landings and Prices of Fishery Products, Boston Fish Pier 1954," p. i.

[83]"N. Bedford Skipper Protests Price Cutting After Auction," National Fisherman, 47:12 (April 1967), p. 23A; Henry S. Galus, "Long Strike Hurts New Bedford," National Fisherman, 52:1 (May 1971), p. 20A; E. L. Pintor, "1971 Tie-Up Achieved Little for New Bedford," 52:12 (April 1972), pp. 18A, 25A; Henry S. Galus, "Boatowners United No 'Armchair Clique': Roche," National Fisherman, 53:3 (July 1972), p. 6C.

[84]White, pp. 88-90; Solomon Shapiro, "Annual Earnings of Boston Fishermen in 1951," Monthly Labor Review, 74:6 (June 1952), pp. 668-669; Mulkern, p. 6; Ackert.

[85]White, chapter 5; B. E. Lindgren, "Landings and Prices of Fishery Products at Boston Fish Pier 1946," pp. ii-v; Joseph Pileggi, "Landings and Prices of Fishery Products, Boston Fish Pier, 1947," p. 5; "Massachusetts Union Ordered to Cease Limiting Catches," Atlantic Fisherman, 31:6 (July 1950), p. 41.

[86]Buffum, "2-Week New Bedford Strike Ends," pp. 3A, 21A; White, chapter 5; Ackert.

[87]Norton and Miller, pp. 21, 31; Ackert.

[88]Ackert.

[89]Ackert; Jack Stewardson, "Fishermen Bypass Auction Board," New Bedford Standard Times, Nov. 29, 1971; "State Rules Against City Fish Auction," Gloucester Daily Times, Dec. 15, 1971, p. 1; John Burt, secretary-treasurer, New Bedford Fishermen's Union, statements at meeting of New England Fishery Management Council, fall 1977; Tim Sullivan, "Fishermen Putting Less Faith in Unions," Gloucester Daily Times, Oct. 25, 1977, p. 1.

[90]Frederick W. Bell, "The Economics of the New England Fishing Industry: The Role of Technological Change and Government Aid," Research Report No. 31, Federal Reserve Bank of Boston, Boston, Mass., Feb. 1966, chapter 7; White, pp. 19-27; "Hub of Knox County's Progressive Fishing Industry--Rockland . . . ," pp. 21, 23; Ackert; Federal Trade Commission, p. 8; Edward L. Lynch, Richard M. Doherty, and George P. Draheim, "The Groundfish Industries of New England and Canada," Circular 121, Fish and Wildlife Service, Department of the Interior, Washington, D. C., July 1961, table V-12, p. 167.

[91]Peter K. Prybot, "Old-Line Gloucester Family 'Fishes' on Land and at Sea," National Fisherman, 55:9 (Jan. 1975), pp. 9B, 16B; Jerry Murphy, "Gloucester's Brancaleones, New Dragger Owners, Are Veterans of Rugged Industry," National Fisherman, 45:5 (Sept. 1964), p. 22; Bartlett, part II; Ross; Area Redevelopment Authority, p. 25; U.S., Congress, House of Representatives, Hearings before the Subcommittee on Fisheries and Wildlife Conservation of the Committee on Merchant Marine and Fisheries, "Problems of the Fishing Industry," 81st Cong., 1st sess., Feb. 1949, pp. 49-50. Fishing families also diversified into ownership of gear supply firms, marine railways, fish dealing and processing, fuel supply.

[92]Frank Mazzaglia, director, Gloucester Fisheries Association, personal communication, fall 1977; Norton and Miller, p. 34; Richard M. Doherty, G. Paul Draheim, Donald J. White, and Charles L. Vaughn, "Economic Study of Sea Scallop Production in the United States and Canada," Fishery Industrial Research, 2:3 (Nov. 1964), pp. 60-61; Cushing and Lord, Gloucester interviews, 1978-79.

[93] Fishery Statistics of the United States, 1950-1965; "New Bedford Fish and Shellfish Catch Sets New Record," Atlantic Fisherman, 32:1 (Feb. 1951), p. 44; "New Bedford Landings Set Value Record in 1952," Atlantic Fisherman, 34:1 (Feb. 1953), pp. 26-27; "New Bedford Fourth in Nation in Value of Fish Landed," Atlantic Fisherman, 35:1 (Feb. 1954), p. 35; "New Bedford Ranks Third in Value of Fish Landed," National Fisherman, 37:10 (Feb. 1957), p. 46.

[94] Most scallop income went to the offshore fleet. In 1965 inshore boats landed no sea scallops in New Bedford. Numbers that distinguish between offshore and inshore are not available for earlier years (tabulations of 1965 trip data for vessels under fifty gross tons, Northeast Fisheries Center); Fishery Statistics of the United States, 1945-1965; Jon Lawrence, "Scallop Fleet, Landings Shrink in New Bedford," National Fisherman, 47:5 (Sept. 1966), p. 24B.

[95] Doherty, et al., pp. 60-62; U. S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Scallops 1930-72: Basic Economic Indicators, C. F. S. No. 6127, June 1973, Table I-2.

[96] Fishery Statistics of the United States, 1945-1965; tabulations of 1965 trip data for vessels under fifty gross tons, Northeast Fisheries Center; "Rigging for Scallop Fishing . . ."

[97] Doherty, et al., pp. 60-62; Area Redevelopment Authority, pp. 11-13.

[98] Fishery Statistics of the United States, 1945-1965. Inshore boats caught a share of the total weight of landings: 15 percent in 1947, 17 percent in 1950, only 3 percent in 1965. Inshore boats earned a share of the revenue: 14 percent in 1948, 3 percent in 1965 (tabulations of trip data for 1965 vessels under fifty gross tons, Northeast Fisheries Center; O'Brien, et al., "Landings and Prices of Fishery Products, Boston Fish Pier," various years).

[99] Fishery Statistics of the United States, 1945-1965; tabulations of trip data for 1965 for vessels over fifty gross tons, Northeast Fisheries Center.

[100] O'Brien, et al., "Landings and Prices of Fishery Products, Boston Fish Pier," various years. The inshore fleet shrank as well--from thirty small draggers (less than fifty gross tons) and twenty small line trawlers in 1947 to one small dragger and seven small line trawlers in 1965.

[101]Lynch, et al., chapter 5, especially Tables V-7, V-8, V-10.

[102]Norton and Miller, pp. 3, 14-18; Mulkern.

[103]Fishery Statistics of the United States, 1945-1965.

[104]Fishery Statistics of the United States, 1945-1965. Although data are not available which distinguish between the catches of offshore and inshore boats for earlier years, in 1965 inshore boats harvested less than 4 percent of redfish sold in Gloucester. Before 1950 inshore boats probably depended on redfish more, but as stocks of redfish in the Gulf of Maine became scarce, boats moved farther offshore to the richer stocks in the Nova Scotia banks, the Gulf of St. Lawrence, and the Grand Banks, far out of range of smaller boats (tabulations of 1965 trip data for vessels less than fifty gross tons, Northeast Fisheries Center; Kelly, et al., "Redfish," pp. 4, 6).

[105]Fishery Statistics of the United States, 1945-1965.

[106]O'Brien, "New England Whiting Fishery . . .", p. 4; Fishery Statistics of the United States, 1945-1965. In 1965, the only year for which data distinguish between inshore and offshore activity in Gloucester, offshore boats brought in 63 percent of the whiting catch (tabulations of 1965 trip data for vessels over fifty gross tons, Northeast Fisheries Center).

[107]Fishery Statistics of the United States, 1960-1965; Hall and McAvoy, p. 16. Almost all of the growth of the haddock landings came from offshore boats. Inshore boats brought in only 9 percent of the haddock in 1965 (tabulations of 1965 trip data for vessels under fifty gross tons, Northeast Fisheries Center).

[108]ICNAF, "List of Fishing Vessels . . . 1965"; U.S. Tariff Commission, "Groundfish: Fishing and Filleting" (Washington, D. C.: May 1957), Table 5. These figures offer only an approximate idea of trends in numbers of offshore vessels. The ICNAF number is for boats registered in Gloucester. The Tariff Commission numbers are boats which landed fish in Gloucester.

[109]U.S. Tariff Commission, pp. 67-69; Lynch, et al., pp. 70-71. Figures are for vessels fishing predominantly for groundfish; these include virtually all Gloucester offshore boats.

[110]U.S. Tariff Commission, pp. 52-59; Lynch, et al., Table V-18; Salvatore Favazza, chairman, Gloucester Fisheries Commission, to Gloucester Fisheries Commission, Sept. 14, 1961, files of the Gloucester Fisheries Commission.

[111]Hall and McAvoy, p. 40; Fishery Statistics of the United States, 1945-1965; U.S. Tariff Commission, pp. 52-59, 69-71; Arthur N. Thurston, "Long Distance Ocean Perch Fishery Conducted on Big Scale by Me. Firm," National Fisherman, 42:4 (Aug. 1961), p. 24; "Hub of Knox County's Progressive Fishing Industry . . . "

[112]U.S., Congress, House of Representatives, Hearings before the Subcommittee on Fisheries and Wildlife Conservation of the Committee on Merchant Marine and Fisheries, "Problems of the Fishing Industry," 81st Cong., 1st sess., Feb. 1949.

[113]Haddock, cod, redfish, and silver hake (whiting) were the most important commercially; others were harvested as bycatch in fishing for the more valuable species. Cod, too, was landed principally as bycatch from the directed haddock fishery.

[114]See, for example, U.S., Congress, Senate, Hearings before the Committee on Interstate and Foreign Commerce, "Fisheries Legislation," 84th Cong., 2d sess., March 19-23, 26, 1956; U.S., Congress, House of Representatives, Hearings before Subcommittee on Fisheries and Wildlife Conservation of the Committee on Merchant Marine and Fisheries, "Establishment of a National Policy for Commercial Fisheries," 84th Cong., 2d sess., May 10, 21, 22, June 8, 1956.

[115]U.S. Tariff Commission, "Groundfish Fillets (1954): Report to the President on Escape-Clause Investigation No. 25," (Washington, D.C.: May 1954); U.S. Tariff Commission, "Groundfish Fillets (1956): Report to the President on Escape-Clause Investigation No. 47" (Washington, D.C.: Oct. 1956); see, for example, "Twelve New England Senators in Letter to President Seek Federal Aid," New York Times, March 24, 1956, p. 11, col 3; U.S., Congress, Senate, Hearings before the Committee on Interstate and Foreign Commerce, "Fisheries legislation," 84th Cong., 2d sess., March 1956; U.S., Congress, House of Representatives, Hearings before Subcommittee on Fisheries and Wildlife Conservation of the Committee on Merchant Marine and Fisheries, "Establishment of a National Policy for Commercial Fisheries, 84th Cong., 2d sess., May-June 1956; "Should an Old Massachusetts Industry Be Penalized?" statement by Rep. John F. Kennedy of Massachusetts, Congressional Record, vol. 98, pt. 6 (June 25, 1952), pp. 8085-8086; "The Fishing Industry," statement by Senator Leverett Saltonstall, Congressional Record, vol. 103, pt. 12

(Aug. 30, 1957), p. 16586; "Problems Facing Maine Fisheries," statement by Senator Frederick Payne of Maine, Congressional Record, vol. 102, pt. 5 (April 9, 1956), p. 5910-5911; Statement by Rep. Philip J. Philbin of Massachusetts, Congressional Record, vol. 103, pt. 10 (Aug. 8, 1957), p. 14138; statement by Rep. Thomas J. Lane of Massachusetts, extension of remarks, Congressional Record, vol. 104, pt. 8 (May 29, 1958), pp. 9862-9863.

CHAPTER 3

EFFORTS AT REVITALIZATION

[1]U. S., Congress, House of Representatives, Hearings before the Subcommittee on the Fisheries and Wildlife Conservation of the Committee on Merchant Marine and Fisheries, "Problems of the Fishing Industry," 81st Congress, 1st sess., Feb. 1949, pp. 14ff.; House Resolution 147, Congressional Record, vol. 95, part 3, April 4, 1949, p. 3821.

[2]U. S., Congress, "Problems of the Fishing Industry," pp. 56, 95-99; U. S., Congress, Senate, Hearings before the Committee on Interstate and Foreign Commerce, "Fisheries Legislation," 84th Cong., 2d sess., March 1956, p. 164; John H. Fenton, "Future of Fishing Frets Northeast," New York Times, Sept. 25, 1951, p. 59, col. 1.

[3]U. S., Congress, "Problems of the Fishing Industry," pp. 52-57, 87-89.

[4]Ibid., p. 55.

[5]Ibid., p. 96.

[6]Ibid., pp. 50-52.

[7]Ibid., pp. 86, 96.

[8]Ibid., pp. 43-44, 87-89.

[9]Ibid., pp. 46-47.

[10]Ibid., p. 90. New England fishing industry representatives repeated these arguments through the next decade, although in less detail and with variations to fit the setting. See, for example, "New England Producers Seek Relief from Imports," Atlantic Fisherman, 32:11 (Dec. 1951), pp. 15, 28; U. S., Congress, House of Representatives, Hearings before Subcommittee on Shellfish and Salt Water Fisheries of the Committee on Merchant Marine and Fisheries, "Distribution of Fishery Products," 83rd Cong., 2d sess., April 1954; U. S., Congress, House of Representatives, Hearings before Subcommittee on Fisheries and Wildlife Conservation of the Committee on Merchant Marine and Fisheries, "Establishment of a National Policy for Commercial Fisheries," 84th Cong., 2d sess., May-June 1956;

U.S., Congress, House of Representatives, Hearings before Committee on Merchant Marine and Fisheries, "New England Fisheries Subsidies," 85th Cong., 2d sess., May and June 1958.

[11]George F. Kelly, et al., "Redfish," Fishery Facts-1, National Marine Fisheries Service, National Oceanic and Atmospheric Administration, Department of Commerce (Seattle, Washington: NMFS, Oct. 1972); Edward L. Lynch, Richard M. Doherty, and George P. Draheim, "The Groundfish Industries of New England and Canada," Circular 121, Fish and Wildlife Service, Department of the Interior, Washington, D.C., July 1961; Frederick W. Bell, "The Economics of the New England Fishing Industry: the Role of Technological Change and Government Aid," Research Report No, 31, Federal Reserve Bank of Boston, Boston, Mass., Feb. 1966.

[12]U.S. Tariff Commission, "Groundfish Fillets: Report on the Escape-Clause Investigation," Report No. 182 (Washington, D.C.: GPO, 1953), p. 25.

[13]Donald J. White, The New England Fishing Industry: A Study in Price and Wage Setting (Cambridge, Mass.: Harvard University Press, 1954), pp. 125-126; U.S., Congress, "Problems of the Fishing Industry," p. 46.

[14]Tariffs were actually quite high on salt fish by most standards, 25 percent ad valorem. White, pp. 125-126; U.S., Congress, House of Representatives, Hearings before Committee on Merchant Marine and Fisheries, "Defining American Fishery," 76th Cong., 3d sess., April 1940.

[15]White, p. 127.

[16]White, pp. 127ff.; House Resolution 147, p. 3821; "Effect of Foreign Competition on the United States Fishing Industry," House Doc. 180, letter from Assistant Secretary of State transmitting a report authorized under House Resolution no. 147 with reference to the domestic fishing industry, 81st Cong., 1st sess., 1949; U.S., Congress, Senate, Hearings before Committee on Finance, "Trade Agreements Extension Act of 1951," 82d Cong., 1st sess., Feb.-April 1951, pp. 214ff., 331ff.

[17]U.S. Tariff Commission, "Groundfish Fillets . . .," 1953, pp. 2-19.

[18]U.S. Tariff Commission, "Groundfish Fillets (1954): Report to the President on Escape-Clause Investigation No. 25" (Washington, D.C.: May 1954), pp. 4-5; "Eisenhower Bars Higher Fish Duty," New York Times, July 3, 1954, p. 17, col. 4.

[19]"New Product Seen Spurring Fish Use," New York Times, Oct. 3, 1953, p. 26, col. 6. For an example of these attitudes towards fish, see general discussion of cooking fish in Irma S. Rombauer and Marion Rombauer Becker, Joy of Cooking (New York: New American Library, 1973), p. 347.

[20]"Fish Stick Production," National Fisherman, 35:5 (Sept. 1954), p. 9; U.S., Department of the Interior, Fish and Wildlife Service, Fishery Statistics of the United States, Statistical Digest 41, 1955; U.S., Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Fisheries of the United States, 1976 (Washington, D.C.: 1977), p. 64.

[21]One of the most active lobbyists did represent fish stick processors as well as vessel owners and processors dependent on domestic fish, and he spoke for each on different occasions.

[22]Fishing Masters' Association, "Official Yearbook of the Fishing Masters' Association," see issues from the early 1950s; John H. Fenton, "Future of Fishing Frets Northeast," New York Times, Sept. 25, 1951, p. 59, col. 1; U.S., Congress, Senate, Hearings before Committee on Interstate and Foreign Commerce, "Fisheries Legislation," 84th Cong., 2d sess., March 1956, pp. 160ff., 281.

[23]Testimony by Secretary of State Dean Acheson in U.S., Congress, "Trade Agreements Extension Act of 1951," pp. 3ff.; "Canada Warns U.S. on Import Curbs," New York Times, July 21, 1953, p. 6; "Canada Reassured on Imports to U.S.," New York Times, Aug. 13, 1953, p. 28.

[24]"Low Duty on Fish Sticks," Atlantic Fisherman, 35:3 (April 1954), p. 8; "Duty on Fish Sticks," National Fisherman, 35:3 (July 1954), p. 9; Amendment offered by Senator Leverett Saltonstall, Congressional Record, 83rd Cong., 2d sess., vol. 100, part 11 (Aug. 11, 1954), p. 14009; Statement by Representative William Bates, Congressional Record, 83rd Cong., 2d sess., vol. 100, part 11 (Aug. 16, 1954), p. 14629.

[25]U.S. Tariff Commission, "Groundfish Fillets (1956): Report to the President on Escape-Clause Investigation No. 47" (Washington, D.C.: Oct. 1956), pp. 3-4; "Text of Eisenhower Letter on Tariff," New York Times, Dec. 11, 1956, p. 35.

[26]W. H. Laurence, "President Bars Tariff Rise on Fish to Assist 3 Allies," New York Times, Dec. 11, 1956, p. 1; "New Policy Seen in Veto on Tariff," New York Times, Dec. 16, 1956, sec. III, p. 1; "Fillets and Tariffs," editorial, New York Times, Dec. 13, 1956, p. 36; "President Reaffirms Liberal Trade Policy," New York Times, Dec. 16, 1956, sec. IV, p. 7.

[27]"President Reaffirms Liberal . . ."; "New Policy Seen in Veto . . ."; "President Bars Tariff Rise . . ."; U.S., Congress, House of Representatives, Hearings before Committee on Merchant Marine and Fisheries, "New England Fisheries Subsidies," 85th Cong., 2d sess., May-June 1958, pp. 5ff.; James Ackert, Gorton Corporation, personal communication, spring 1978.

[28]"Gloucestermen Seek Meeting with President," National Fisherman, 42:4 (Aug. 1961), p. 3; "Resolution To Protect the American Fresh Groundfish Producer," adopted by the Gloucester Fisheries Commission, Oct. 14, 1963 (files of the Gloucester Fisheries Commission); Salvatore Favazza, "Fresh Fish Irradiation (Blessing or Curse?)," The Master Mariner, 1967 (reprint in files of Gloucester Fisheries Commission); "Brief of the New England Association for the Preservation of the Groundfish Industry," before U.S. Tariff Commission, Groundfish Fillets Investigation under section 221, Trade Expansion Act of 1962, Jan. 28, 1964; Economic Research Laboratory, U.S., Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Atlantic and Pacific Groundfish 1932-72, Basic Economic Indicators, C.F.S. no. 6271, Table X-2; H.R. 8048, introduced by Representative Bates, April 5, 1967, and referred to Committee on Ways and Means, 90th Cong., 1st sess. (files of the Gloucester Fisheries Commission); Salvatore Favazza to Rep. William Bates, Jan. 22, 1967 (files of Gloucester Fisheries Commission); Congressional Record, 1967.

[29]For example, U.S., Congress, House of Representatives, Hearings before Committee on Ways and Means, "Foreign Trade and Tariff Proposals," Part 7, 90th Cong., 2d sess., June and July 1968, James Ackert's complaints about Canadian violation of anti-dumping regulations, pp. 3387ff.; "3 Sections of N.E. Fishing Industry Join in Move to Restrict Imports," National Fisherman, 48:12 (April 1968), p. 26A.

[30]U.S., Congress, "Distribution of Fishery Products"; U.S., Congress, Hearings before Committee on Interstate and Foreign Commerce, "To Encourage the Distribution of Fishery Products," 83rd Cong., 2d sess., April 1954; U.S., Congress, "Establishment of a National Policy for Commercial Fisheries"; U.S., Congress, "Fisheries Legislation"; U.S., Congress, "New England Fisheries Subsidies"; U.S., Congress, Senate, Hearings before Committee on Interstate and Foreign Commerce, "Fisheries Legislation," 85th Cong., 2d sess., July 1958; Ackert, spring 1978.

[31]"Gloucester Boatowner Groups Merge to Improve Industry," National Fisherman, 35:4 (Aug. 1954), p. 44; U.S., Congress, "New England Fisheries Subsidies," pp. 87ff.; John J. O'Brien, "Landings and Prices of Fishery Products, Boston Fish Pier, 1956," Bureau of Commercial Fisheries, Market News Service, Boston, Mass., p. X; O'Brien, "Landings and Prices of Fishery Products, Boston Fish Pier, 1957," p. 11.

[32]U.S., Congress, House of Representatives, Hearings before Subcommittee on Fisheries and Wildlife Conservation of the Committee on Merchant Marine and Fisheries, "Commercial Fishery Research" in "Miscellaneous Fisheries Legislation," 88th Cong., 2d sess., March 1964; "Massachusetts Committee to Study Problems of Industry," Atlantic Fisherman, 35:3 (April 1954), p. 22; Commonwealth of Massachusetts, "Final Report on the Studies of Massachusetts Marine Fisheries Problems by the Marine Fisheries Advisory Commission," publication no. 232, Dec. 1961; Commonwealth of Massachusetts, "Special Report of the Department of Natural Resources Relative to Restricting Use of Beam or Otter Trawls . . .," House No. 3703, under Chapter 43 of the Resolves of 1963, Jan. 1964.

[33]U.S., Congress, "New England Fisheries Subsidies," p. 83.

[34]P.L. 466, Chapter 447, 83rd Cong., 2d sess., 1954 (Saltonstall-Kennedy); "Fish and Wildlife Act of 1956," P.L. 1024, Chapter 1036, 84th Cong., 2d sess., 1956; P.L. 86-516, 86th Cong., 2d sess., 1960.

[35]U.S., Congress, "New England Fisheries Subsidies," p. 55.

[36]Ibid., p. 39; U.S., Congress, House of Representatives, Hearings before Subcommittee on Fisheries and Wildlife Conservation of the Committee on Merchant Marine and Fisheries, "Assistance to Depressed Segments of the Fishing Industry," 86th Cong., 1st sess., April and June 1959, pp. 94, 55, 73.

[37] U.S., Congress, "Distribution of Fishery Products"; U.S., Congress, "To Encourage the Distribution of Fishery Products"; U.S., Congress, "Establishment of a National Policy for Commercial Fisheries"; U.S., Congress, "Fisheries Legislation," 1956; U.S., Congress, "New England Fisheries Subsidies"; U.S., Congress, "Fisheries Legislation," 1958; U.S., Congress, "Assistance to Depressed Segments of the Fishing Industry"; U.S., Congress, Senate, Hearings before Committee on Interstate and Foreign Commerce, "Fishery and Wildlife Legislation," 86th Cong., 1st sess., Aug. 1959, pp. 240ff.

[38] P.L. 466, Chapter 447, 83rd Cong., 2d sess., 1954.

[39] O'Brien, "Landings and Prices of Fishery Products, Boston Fish Pier, 1956," pp. XI, XIII, XIV; U.S., Congress, Senate, Hearings before Consumer Subcommittee of Committee on Commerce, "Fishery Products Protection Act of 1967," 90th Cong., 1st sess., July 1967, pp. 114-115, 64.

[40] U.S., Congress, "Fishery Products Protection Act of 1967," pp. 1, 21, 114; Gloucester Fisheries Commission, "Yes 'Wholesome Fish' Legislation But . . .," Gloucester Fisheries Commission, Gloucester, Mass., 1967 (files of Gloucester Fisheries Commission); U.S., Congress, House of Representatives, Hearings before Subcommittee on Fisheries and Wildlife Conservation of Committee on Merchant Marine and Fisheries, "Fishery Products Protection" in "Fish and Wildlife Legislation," part 3, 90th Cong., 2d sess., Feb. 1968, pp. 90ff.

[41] "Fishery Research Funds Increased by $3 1/2 Million," National Fisherman, 37:11 (March 1957), p. 13. For examples of the market studies: U.S., Department of Interior, Fish and Wildlife Service, "Fish and Shellfish Preferences of Household Consumers--1951," Fishery Leaflets 407, 408, 409, 410; Richard A. Kahn and Walter H. Stolting, "Household Consumer Preferences for Breaded Shrimp and Breaded Fish Sticks," Fishery Leaflets 424, 425, 426 (U.S., Department of Interior, Fish and Wildlife Service, 1956); U.S., Department of Commerce, Bureau of Commercial Fisheries, "Fish and Shellfish Consumption in Public Eating and Drinking Places," Special Scientific Report--Fisheries No. 295, March 1959.

[42] "New England Market Research," National Fisherman, 38:12 (April 1958), p. 7; "How Saltonstall-Kennedy Funds Aid Industry," National Fisherman, 36:4 (Aug. 1955), p. 44.

[43]Ackert, spring 1978; O'Brien, "Landings and Prices of Fishery Products, Boston Fish Pier, 1956," p. IX; "Fishery Research Funds Increased . . .," p. 13; U.S., Congress, "Foreign Trade and Tariff Proposals," p. 3389.

[44]"U.S. Price Supports for Fish Proposed," New York Times, June 1, 1950, p. 46; "Price Support," Atlantic Fisherman, 31:3 (April 1950), p. 9; U.S., Congress, "New England Fisheries Subsidies," p. 55.

[45]"Massachusetts Boat Owners Seek Insurance Aid," National Fisherman, 38:8 (Dec. 1957), p. 25; "Gloucester Vessel Owners Seek Solution to Insurance Problems," National Fisherman, 37:12 (April 1957), p. 38; "Massachusetts Committee on Fisheries Discusses Insurance," Atlantic Fisherman, 35:4 (May 1954), p. 50.

[46]U.S., Congress, House of Representatives, Hearings before Committee on Merchant Marine and Fisheries, "Review of Fish and Wildlife Service," 85th Cong., 2d sess., June 1958, pp. 61-62; "Safety in the Fishing Industry," New England Business Review, Oct. 1958, pp. 1-4; John J. Murray, "Safety for the Commercial Fishing Vessel and Crew," Commercial Fisheries Review, 30:6 (June 1968), pp. 46-52.

[47]U.S., Congress, "New England Fisheries Subsidies," p. 55; "Massachusetts Boat Owners Seek Insurance Aid"; U.S., Congress, House of Representatives, Hearings before Subcommittee on Fisheries and Wildlife Conservation of the Committee on Merchant Marine and Fisheries, "Increased Assistance to Commercial Fisheries," 91st Cong., 2d sess., Feb. 1970.

[48]Darrel A. Nash and Morton M. Miller, "Insurance Coverage for U.S. Commercial Fishing Vessels--A Survey of Current Insurance Costs, Availability and Other Special Problems," File Manuscript No. 74, Economic Research Laboratory, National Marine Fisheries Service, Dec. 1970, Appendix Table A-4; Murray, "Safety for Commercial Fishing Vessel and Crew," pp. 46-47; Lynch, et al., pp. 65-66.

[49]Lynch, et al., pp. 65-66; Warner C. Danforth and Chris A. Theodore, "Hull Insurance and Protection and Indemnity Insurance of Commercial Fishing Vessels," Special Scientific Report--Fisheries No. 241, Fish and Wildlife Service, Department of Interior, Washington, D.C., Dec. 1957, pp. 99-103.

[50]U.S., Congress, "Fisheries Legislation," 1956, p. 121; U.S., Congress, House of Representatives, Hearings before Committee on Merchant Marine and Fisheries, "Training of Fishing Personnel," 84th Cong., 2d sess., June 1956; "Fisheries College on Atlantic Coast," Atlantic Fisherman, 33:9 (Oct. 1952), p. 5.

[51]P.L. 1027, Chapter 1039, 84th Cong., 2d sess., 1956; "Gloucester Fishing Students Won't Have to Hunt for Jobs," National Fisherman, 44:12 (April 1964), p. 34; R. Anthony Barnes, "Meeting the Challenge: Marine Technology Thrives at MVTI," National Fisherman, 43:10 (Feb. 1963), p. 24.

[52]John J. Murray, "On-the-Job Training Program for Trainee Commercial Fishermen," Commercial Fisheries Review, 27:4 (April 1965), pp. 9-11; Robert A. Hall and Henry R. McAvoy, "New England Fisheries--Annual Summary, 1963," Market News Service, Bureau of Commercial Fisheries, Boston, Mass., p. 19; John J. O'Brien, "New England Fisheries--Annual Summary, 1964," Market News Service, Bureau of Commercial Fisheries, Boston, Mass., p. 16; John J. O'Brien and Henry R. McAvoy, "New England Fisheries--Annual Summary, 1965," Market News Service, Bureau of Commercial Fisheries, Boston, Mass., p. 15; James D. Ackert, "Comment," in Frederick W. Bell and Jared E. Hazleton, eds., Recent Developments and Research in Fisheries Economics (Dobbs Ferry, N.Y.: Oceana Publications, 1967); Burton T. Coffey, "Seafreeze Atlantic Ship of Fools to Crewmen," National Fisherman, 53:1 (May 1972), p. 4C.

[53]U.S., Congress, "To Encourage the Distribution of Fishery Products," pp. 63-70.

[54]"Frozen-at-Sea Round Fish Landed at Boston," Atlantic Fisherman, 33:6 (July 1952), pp. 14-15; the research results were reported in detail in Commercial Fisheries Review from Feb. 1952 through late 1955; U.S., Congress, "Review of Fish and Wildlife Service"; Sumner M. Rosen, "An Economic Analysis of Freezing Fish at Sea," Commercial Fisheries Review, 20:11 (Nov. 1958), pp. 1-14.

[55]P.L. 1027, Chapter 1039, 84th Cong., 2d sess., 1956; "Commercial Fisheries Research and Development Act of 1964," P.L. 88-309, 88th Cong., 2d sess., 1964; "National Sea Grant College and Program Act of 1966," P.L. 94-461, 94th Cong., 2d sess., 1966. The New England Fisheries Development Program (NEFDP) receives EDA funds in a circuitous route through other agencies. The NEFDP then funds research which will encourage the use of underutilized species.

[56]U.S., Congress, "Training of Fishing Personnel," pp. 14-15; H.V.R. Palmer, Jr., "The Red Crab Potentially Profitable," National Fisherman, 55:13 (April 30, 1975), pp. 28-29.

[57]Bell, "The Economics of the New England Fishing Industry," chap. 6; U.S., Congress, "Review of Fish and Wildlife Service," p. 65; Herbert W. Graham, "A Minimum Net-Mesh Size for the New England Haddock Fishery," Commercial Fisheries Review, 14:12 (Dec. 1952), pp. 1-5.

[58]U.S., Congress, "Fisheries Legislation," 1956, p. 279. In contrast to the attitude of banks towards the groundfish industry, banks in New Bedford continued to make loans through the entire period to scallop and flounder boats (Leah J. Smith, Woods Hole Oceanographic Institution, personal communication).

[59]U.S., Congress, "New England Fisheries Subsidies," especially pp. 81, 145; U.S., Congress, "Fisheries Legislation," 1958; U.S., Congress, "Assistance to Depressed Segments of the Fishing Industry"; U.S., Congress, Senate, Hearings before Merchant Marine and Fisheries Subcommittee of the Committee on Interstate and Foreign Commerce, "Fishery and Wildlife Legislation," 86th Cong., 1st sess., Aug. 1959.

[60]"Fish and Wildlife Act of 1956," sec. 4.

[61]U.S., Congress, "Fisheries Legislation," 1958, pp. 136-137; U.S., Congress, "New England Fisheries Subsidies," pp. 137-138; Edward J. Raymond, director, Financial Assistance Division for Northeast Region, Gloucester, Mass., personal communication, Sept. 1978.

[62]U.S., Congress, Senate, Hearings before Merchant Marine and Fisheries Subcommittee of Committee on Commerce, "Fisheries Legislation--1965," 89th Cong., 1st sess., May 1965, p. 99; U.S., Congress, House of Representatives, Hearings before Subcommittee on Fisheries and Wildlife Conservation of Committee on Merchant Marine and Fisheries, "Fisheries Loans" in "Miscellaneous Fish and Wildlife Legislation, 1965," 89th Cong., 1st sess., May 1965, pp. 16ff.

[63]705 loans went to boat owners in the National Marine Fisheries Service's Northeast Region which covers coastal states from Maine through North Carolina. Edward Raymond, director of the Financial Assistance Division for the Northeast, estimates that half the total went to New England owners. Raymond says 75 to 100 loans went to big boats. Records of the

Financial Assistance Division in Washington show 154 loans to boats in the Boston, Gloucester, New Bedford, and Portland areas, but some of these boats must have fished inshore. Twenty-nine percent of the loans to the four ports went to New Bedford; between 1957 and 1971 32 percent of the applications for loans from Boston, Gloucester, and New Bedford came from New Bedford. Raymond, September 1978; Fred J. O'Hara, Financial Assistance Specialist, Financial Services Division, National Oceanic and Atmospheric Administration, Washington, D. C., to the author, Oct. 4, 1978; O'Brien et al., "Landings and Prices of Fishery Products, Boston Fish Pier" and "New England Fisheries--Annual Summary," 1957 through 1971.

[64]Raymond, Sept. 1978.

[65]U. S., Congress, "New England Fisheries Subsidies," pp. 137-138.

[66]U. S., Congress, House of Representatives, Hearings before Subcommittee on Fisheries and Wildlife Conservation of Committee on Merchant Marine and Fisheries, "Miscellaneous Fish and Wildlife Legislation," 87th Cong., 1st sess., May-July 1961, p. 227; Ernest W. Carlson and Darrel A. Nash, "Administration of the Fisheries Loan Fund with Special Consideration of the 'Delinquency Problem,'" Policy Position Paper Number 3: Financial Assistance, File Manuscript 121, Economic Research Laboratory, National Marine Fisheries Service, Dec. 1972. Estimated percent of defaulted in groundfish industry from number of loans granted to New England groundfish boats from 1960 on and number in default by 1972 (Atlantic and Pacific Groundfish 1932-72, Table XI-1). By the time of the default study, 1972, the groundfish resource had been severely depleted. The groundfish industry problems and the perceptions of the problems had completely changed (see chapter 5).

[67]Frederick W. Bell, "The Upgrading of Fishing Vessels: Some Research and Recommendations," Policy Position Paper Number 1: Financial Assistance, File Manuscript 119, Economic Research Laboratory, National Marine Fisheries Service, Nov. 1972. Bell's study responded to a GAO report critical of the assistance programs--"Need to Establish Priorities and Criteria for Managing Assistance Programs for U. S. Fishing-Vessel Operators" (Washington, D. C.: GAO, Feb. 22, 1973).

[68]"Mortgage and Loan Insurance," Fishery Leaflet 499, Branch of Loans and Grants, Bureau of Commercial Fisheries, Department of Interior, 1960; U. S., Congress, House of Representatives, Hearings before Subcommittee on Fisheries and Wildlife Conservation of the Committee on Merchant Marine and Fisheries, "Fish and Wildlife Legislation," 86th

Cong., 2d sess., March and June 1960, pp. 66ff.; U.S., Congress, "Fish and Wildlife Legislation," 1960, p. 71; Atlantic and Pacific Groundfish 1932-72, Table XI-1; Raymond, September 1978.

[69]P.L. 86-516, 1960, sec. 4.

[70]U.S., Congress, House of Representatives, Hearings before Subcommittee on Fisheries and Wildlife Conservation of the Committee on Merchant Marine and Fisheries, "Fishing Vessel Subsidies," 88th Cong., 1st sess., August and November, 1963, pp. 146-147, 53; "Why Isn't Gloucester Seeking Subsidy?" Master Mariner, 1966, p. 28 (files of the Gloucester Fisheries Commission).

[71]One new boat entered the Gloucester offshore fleet during the years of the first subsidy program. The family did not apply for a subsidy. Jerry Murphy, "Gloucester's Brancaleones, New Dragger Owners, Are Veterans of Rugged Industry," National Fisherman, 45:5 (Sept. 1964), pp. 22-23; U.S., Congress, "Fishing Vessel Subsidies," p. 57.

[72]U.S., Congress, "Fishing Vessel Subsidies," pp. 71-75.

[73]"United States Fishing Fleet Improvement Act," P.L. 88-498, 88th Cong., 2d sess., 1964.

[74]U.S., Congress, House of Representatives, Hearings before Subcommittee on Fisheries and Wildlife Conservation of Committee on Merchant Marine and Fisheries, "U.S. Fishing Fleet Improvement Act," 91st Cong., 1st sess., June 1969, p. 64; U.S., Congress, "Fishing Vessel Subsidies," p. 150; Leah J. Smith and Susan B. Peterson, "The New England Fishing Industry: A Basis for Management," Technical Report 77-57, Woods Hole Oceanographic Institution, Woods Hole, Mass., Aug. 1977, p. 44. Other reports allocated the boats to fisheries in slightly different ways (see U.S., Congress, "U.S. Fishing Fleet Improvement Act," p. 39).

[75]U.S., Congress, "Assistance to Depressed Segments of the Fishing Industry," p. 49; O'Brien, "New England Fisheries--Annual Summary, 1959," p. 15.

[76]U.S., Congress, House of Representatives, Hearings before the Committee on Appropriations, "Department of Interior . . .," for the years 1961-1965, sections on the budget of the Bureau of Commercial Fisheries.

[77] U.S., Congress, "Department of Interior . . .," for the years 1964-1969, sections on the budget of the Bureau of Commercial Fisheries; U.S., Congress, House of Representatives, Hearings before a Subcommittee of the Committee on Appropriations, "Department of Interior and Related Agencies Appropriations for 1970," Part 1, 91st Cong., 1st sess., 1969, p. 816.

[78] U.S., Congress, "Fishing Vessel Subsidies," pp. 70ff.; International Commission for the Northwest Atlantic Fisheries, "List of Vessels over 50 Gross Tons Fishing in the ICNAF Convention Area in 1962," Dartmouth, Nova Scotia, Canada, Jan. 1964; Ronald B. Harrison, "Fishermen Begin Feeling Effects of Subsidy," National Fisherman, 45:8 (Dec. 1965), p. 4; Raymond, Sept. 1978.

[79] U.S., Congress, "Fishing Vessel Subsidies," p. 14; U.S., Congress, "U.S. Fishing Fleet Improvement Act," p. 10; U.S., Congress, Senate, Hearings before Subcommittee on Merchant Marine and Fisheries of Committee on Commerce, "Fishing Vessel Construction," 88th Cong., 1st sess., May 1963. The total U.S. harvest had fallen from 4.8 billion pounds in 1949 to 4.3 billion pounds in 1969 (U.S., Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Fishery Statistics of the United States, Statistical Digest 63 [1969]).

[80] P.L. 88-498, sec. 9(7); U.S., Congress, "U.S. Fishing Fleet Improvement Act," pp. 39-40; see discussion of annual funding levels above.

[81] International Commission for the Northwest Atlantic Fisheries, "List of Fishing Vessels, 1971, with Summaries of Fishing Effort for 1969, 1970, and 1971," Dartmouth, Nova Scotia, Canada, 1972; Fishery Statistics of the United States, 1969.

[82] John Frye, "Seafreeze Ships Have Huge Handling Capacities," National Fisherman, 49:8 (Dec. 1968), pp. 20A-22A.

[83] Ibid.

[84] U.S., Congress, "U.S. Fishing Fleet Improvement Act," p. 18.

[85] John Frye, "Owners of 294' Factoryship Accept Challenge," National Fisherman, 49:6 (Oct. 1968), p. 15C.

[86]Ibid.; Ackert, spring 1978.

[87]Ackert, spring 1978; Burton T. Coffey, "Seafreeze Atlantic Ship of Fools to Crewman," National Fisherman, 53:1 (May 1972), p. 5C.

[88]Ackert, spring 1978; U.S., Congress, "U.S. Fishing Fleet Improvement Act," p. 18.

[89]Ackert, spring 1978.

[90]Ibid.; Coffey, "Seafreeze Atlantic . . .," p. 4C.

[91]Coffey, "Seafreeze Atlantic . . .," pp. 4C-7C.

[92]U.S., Congress, House of Representatives, Hearings before Subcommittee on Fisheries and Wildlife Conservation and the Environment of the Committee on Merchant Marine and Fisheries, "Seafreeze Atlantic" in "Fish and Wildlife Miscellaneous--Part 1," 94th Cong., 1st sess., June 5, 1975.

[93]For example, the Fishing Vessel Capital Construction Fund and the Fishing Vessel Obligation Guarantee.

[94]See Chapter 5.

[95]U.S., Department of the Interior, Fish and Wildlife Service, Fishery Statistics of the United States, Statistical Digest 39 (1954); U.S., Department of the Interior, Bureau of Commercial Fisheries, Fishery Statistics of the United States, Statistical Digest 59 (1965); U.S., Bureau of the Census, Statistical Abstract of the United States: 1957 and Statistical Abstract of the United States: 1966 (Washington, D.C. GPO, 1957 and 1966). Boston's total landings fell from 151 million pounds valued at $10.8 million in 1954 to 104 million pounds valued at $11.6 million. Gloucester's total landings fell from 232 million pounds worth $8.2 million to 121 million pounds worth $7 million.

CHAPTER 4

THE SHORTCOMINGS OF INTERVENTION

[1]"Weakness of U.S. Fisheries Policy Emphasized," National Fisherman, 53:5 (Sept. 1962), p. 11; "Saltonstall Urges Fisheries Help," National Fisherman, 56:1 (May 1965), p. 2; "Crowther Urges Subsidy Boost," National Fisherman, 57:12 (April 1967), p. 3A; "Crowther Sees Little Letup in Fisheries Problems," National Fisherman, 58:4 (Aug. 1967), p. 10C.

[2]The Department of Defense does not keep records that distinguish between purchases of imported and domestic fish, or even between fish sticks or portions and fillets. Records of fishery loans from the Bureau of Commercial Fisheries were often discarded after the boat owners repaid the loan, according to Edward J. Raymond, director of the Financial Assistance Division for the NMFS Northeast Region since 1961. Some records are in Washington, some in Gloucester, and others lost because of changes in the location of the center for administration of the loan program. In addition, the funds requested in loan applications are usually not the amount received by fishermen. If the original loan application was approved and the fisherman said he had underestimated his needs, the local office increased the amount of the loan without going through the lengthy approval process again.

[3]See chapter 3.

[4]See chapter 3.

[5]Virgil J. Norton and Morton M. Miller, "An Economic Study of the Boston Large-Trawler Labor Force," Circular 248, Bureau of Commercial Fisheries, Fish and Wildlife Service, Department of the Interior (Washington, D.C., May 1966); Paul V. Mulkern, "Annual Earnings of Boston Fishermen in 1964," Bureau of Labor Statistics, Regional Report, Boston, Mass., Feb. 1966.

[6]U.S., Congress, House of Representatives, Hearings before Subcommittee on Fisheries and Wildlife Conservation of the Committee on Merchant Marine and Fisheries, "Assistance to Depressed Segments of the Fishing Industry," 86th Cong., 1st sess., April and June 1959, p. 52; U.S., Congress, Senate, Hearings before Merchant Marine and Fisheries Subcommittee of the Committee on Interstate and Foreign Commerce,

"Fishery and Wildlife Legislation," 86th Cong., 1st sess., Aug. 1959, p. 251; U.S., Congress, House of Representatives, Hearings before Subcommittee on Fisheries and Wildlife Conservation of the Committee on Merchant Marine and Fisheries, "Fishing Vessel Subsidies," 88th Cong., 1st sess., Aug. and Nov. 1963, p. 58.

[7] See chapter 2. Except under special conditions, auction rules forbade dealers from buying fish from their own boats. Donald J. White, The New England Fishing Industry: A Study in Price and Wage Setting (Cambridge, Mass.: Harvard University Press, 1954), p. 79.

[8] The percent of boats which fish stick producers owned depends on the number of boats General Seafoods owned, and sources disagree about how many that was. The Fishing Masters' Association reported that General Seafoods owned fifteen or sixteen boats in 1950 out of forty-nine large trawlers in Boston (Fishing Masters' Association, "Official Yearbook of the Fishing Masters' Association," Boston, Mass., 1950). The Market News Service of the Fish and Wildlife Service reported that there were only thirty-nine large trawlers in Boston in 1950 (John J. O'Brien, "Landings and Prices of Fishery Products, Boston Fish Pier, 1950," Fish and Wildlife Service, Market News Service, Boston, Mass., p. 9), and fishing industry representatives universally accepted the Market News numbers (see, for example, James Ackert's testimony in U.S., Congress, "Fishing Vessel Subsidies," p. 58). Donald White accepted Thomas Rice's statement that General Seafoods owned only five boats in 1950 (White, p. 53; U.S., Congress, Senate, Hearings before a Subcommittee of the Committee on Interstate and Foreign Commerce, "Northwest Atlantic Fisheries Convention," 81st Cong., 2d sess., April 1950, p. 72). White said that General Seafoods sold half its boats to the Army in 1949 (White, p. 53). If the Fishing Masters' Association had not subtracted those five boats from their list, then their estimate of the number of boats General Seafoods owned and the number of large trawlers in Boston would be closer to the numbers provided by White and the Market News Service. On the other hand, differences in definition of what port a boat was attached to could explain the difference between the Market News and Fishing Masters' Association numbers for large trawlers, also. James Ackert says that in the late 1950s General Seafoods had sixteen large trawlers in Boston (James Ackert, Gorton Corporation, personal communication, March 1978). Assuming that General Seafoods operated fifteen or sixteen boats out of Boston rather than five, two-thirds of the large trawlers in Boston were connected with firms that did fish stick processing in 1955. If General Seafoods had only five boats, then half the large trawlers were owned by firms that produced fish sticks by 1955 (see Fishing Masters' Association, 1950; Fish and Wildlife Service, "Firms Producing Fish Sticks--1955," Washington, D.C., Feb. 1956).

[9]Ackert, March 1978; Lee White to the author, based on interviews of Gorton Corporation managers about their investment decisions, Sept. 20, 1978. The Fulham family provided one of the exceptions to the trend. They owned fish stick processing plants in Massachusetts and California in 1955, and they planned the construction of new boats for Boston in the late 1950s. See discussions of the destinations and ownership transfers of boats leaving Boston in O'Brien, et al., "Landings and Prices of Fishery Products, Boston Fish Pier . . .," 1950-1958; and John J. O'Brien, "New England Fisheries--Annual Summary . . .," Market News Service, Bureau of Commercial Fisheries, Boston, Mass., 1959, 1960; International Commission for the Northwest Atlantic Fisheries [hereafter ICNAF], "List of Vessels over 50 Gross Tons Fishing in the ICNAF Convention Area in 1959," Dartmouth, Nova Scotia, Canada, Nov. 1960. Five large otter trawlers out of twenty-six in Boston in 1959 may have been owned by fish stick producing firms.

[10]See chapter 2.

[11]O'Brien, "New England Fisheries--Annual Summary, 1959," p. 19.

[12]U.S., Congress, Senate, Hearings before the Committee on Interstate and Foreign Commerce, "Fisheries Legislation," 84th Cong., 2d sess., March 1956, p. 164; Joseph Joyce, Market News Service, Boston, Mass., personal communication, Nov. 1978.

[13]U.S. Tariff Commission, "Groundfish: Fishing and Filleting" (Washington, D.C.: May 1957), pp. 58-61; White, pp. 60-67; Mulkern, pp. 4-5; Norton and Miller, pp. 11-12, 16.

[14]White, p. 53; Fishing Masters' Association, 1950; General Foods Corporation, annual reports, 1944-47.

[15]White, pp. 73-75; Ackert, spring 1978.

[16]White, p. 53; Jane Sullivan to the author, senior corporation communications specialist, General Foods Corporation, Nov. 10, 1978; General Foods Corporation, annual report, 1946.

[17]See chapter 3. White, p. 177; Thomas J. Risoli, "Landings and Prices of Fishery Products, Boston Fish Pier, 1954," p. v.

[18]Ackert, spring 1978.

[19] General Foods Corporation, annual report, 1957; "Hub of Knox County's Progressive Fishing Industry--Rockland: Host to the 13th Annual Maine Seafoods Festival," National Fisherman, 40:3 (July 1959), p. 23.

[20] White, pp. 177; "Maine Dragger Fleet Upgraded with Large New Steel Vessel," The Fish Boat, 12:10 (Oct. 1967), p. 38; comparison of Fishing Masters' Association, vessel ownership list, 1950, with ICNAF, "List of Vessels over 50 Gross Tons Fishing in the ICNAF Convention Area in 1959."

[21] Joseph Joyce, Nov. 1977; Economic Resources Center, Gloucester Fisheries Association, "Boats of Gloucester," Jan. 1, 1978, with corrections; Leah J. Smith and Susan B. Peterson, "The New England Fishing Industry: A Basis for Management," Woods Hole Oceanographic Institution, Technical Report 77-57, Aug. 1977, pp. 28ff.

[22] Donald J. White, The New England Fishing Industry: A Study in Price and Wage Setting (Cambridge, Mass.: Harvard University Press, 1954); Committee on New England, National Planning Association, The Economic State of New England, No. 2, "The Fisheries of New England" (Boston, Mass.: New England Council, 1953); U.S., Congress, "Northwest Atlantic Fisheries Convention," pp. 4-20; Charles E. Egan, "Research to Save Fisheries Urged," New York Times, Feb. 15, 1954, p. 15, col. 1.

[23] U.S., Congress, "Fisheries Legislation," pp. 272, 274; U.S., Congress, House of Representatives, Hearings before the Committee on Merchant Marine and Fisheries, "New England Fisheries Subsidies," 85th Cong., 2d sess., May-June 1958, pp. 15, 18.

[24] U.S. Tariff Commission, "Groundfish Fillets (1956): Report to the President on Escape-Clause Investigation No. 47" (Washington, D.C.: Oct. 1956), p. 4.

[25] Food and Agriculture Organization of the United Nations (hereafter FAO), Yearbook of Fishery Statistics, "International Trade," 1958-59, vol. 10 (FAO, Italy, 1960), Table 1-B4.

[26] One study does examine importers' demand for groundfish: Joseph F. Farrell and Harlan C. Lampe, "The New England Fishing Industry: Functional Markets for Finned Food Fish II," No. 3, Bulletin 380, Agricultural Experiment Station, University of Rhode Island, 1965,

pp. 22-23. The results of this study, however, failed to explain changes in the quantity of haddock imported, as the authors point out. The Fish and Wildlife Service researched the consumption of fish sticks by different groups but never estimated demand. Richard A. Kahn and Walter H. Stolting, "Consumer Preferences for Breaded Shrimp and Fish Sticks," part 1, "National and Regional Summary," Fish and Wildlife Service, Fishery Leaflet 424, July 1955.

[27]U.S., Congress, House of Representatives, Hearings before Committee on Merchant Marine and Fisheries, "Defining American Fishery," 76th Cong., 3d sess., April 1940; U.S., Congress, "Fisheries Legislation," pp. 160ff.; FAO, Yearbook of Fishery Statistics, 1960-61, vol. 13, Tables 1-C; O'Brien, "New England Fisheries--Annual Summary, 1960," p. 6.

[28]The U.S. Department of State had been concerned that the U.S.S.R., East Germany, and Czeckoslovakia bought nearly all the rest of Iceland's fish exports. If the U.S. imposed higher tariffs, Iceland would become dependent on the Communist bloc for purchase of fish, which amounted to a very large percent of all Iceland's exports, the State Department argued ("Text of Eisenhower Letter on Tariff," New York Times, Dec. 11, 1956, p. 35; W.H. Laurence, "President Bars Tariff Rise on Fish to Assist 3 Allies," New York Times, Dec. 11, 1956, p. 1; "New Policy Seen in Veto on Tariff," New York Times, Dec. 16, 1956, sec. III, p. 1; "Fillets and Tariffs," editorial, New York Times, Dec. 13, 1956, p. 36).

[29]FAO, Yearbook of Fishery Statistics, 1960-61, vol. 13, Tables 1-C; O'Brien, "New England Fisheries--Annual Summary, 1960," p. 6.

[30]A pound of cod landed at the dock yields .38 pound of fillet; a pound of landed haddock yields .40 pound of fillet. Therefore, the ex-vessel value of a pound of fillet is the ex-vessel price for a pound of fish divided by the conversion factor, .38 or .40.

[31]U.S., Department of the Interior, Bureau of Commercial Fisheries, Fishery Statistics of the United States, Statistical Digest 43 (1956); Dominion Bureau of Statistics, Fisheries Statistics of Canada, 1956-1960, "Newfoundland" and "Nova Scotia"; FAO, Yearbook of Fishery Statistics, 1960-61, Tables I-C. Transportation costs are for 1960-1962 and are not available for other years (Frederick W. Bell, "The Economics of the New England Fishing Industry: The Role of Technological Change and

Government Aid," Research Report No. 31, Federal Reserve Bank of Boston, Boston, Mass., Feb. 1966, p. 30).

[32]The General Seafoods plant might have processed from domestically produced fish blocks at the Rockland ocean perch plant (John Low, "40-Fathom Continues Expansion," National Fisherman, 54:4 [Aug. 1963], p. 18).

[33]Kahn and Stolting, p. 40. More people may have used fish sticks, but the consumer study's questionnaire asked separately about purchases of different kinds of fish sticks and did not indicate how many respondents were included as consumers of more than one kind. The researchers did not use statistical tests to show that their samples were different, but the numbers indicated that 54 percent of households in the Northeast had used precooked fish sticks, the most common kind, while about 30 percent of households or fewer in all other regions had used precooked fish sticks.

[34]Kahn and Stolting. In the mid-1960s as much as 87 percent of the Boston catch may have been consumed in the Northeast (Frederick L. Gaston and David A. Storey, "The Market for Fresh Fish That Originates from Boston Fish Pier Landings," in Frederick W. Bell and Jared E. Hazleton, eds., Recent Developments and Research in Fisheries Economics (Dobbs Ferry, N.Y.: Oceana Publications, 1967), pp. 65-81). Ten years earlier the market for New England frozen fish could have been wider if imports had not replaced the New England product as much.

[35]FAO, Yearbook of Fishery Statistics, 1960-61, vol. 13, Tables I-C; Fisheries Statistics of Canada, 1956-1960, "Newfoundland" and "Nova Scotia"; Fishery Statistics of the United States, 1956. The cost estimate for the Canadian product is a maximum. It assumes tariffs increased prices by the full amount of the duty, that the above-quota tariff level was in effect, and that transportation costs from Nova Scotia were at their 1960-1962 level (Bell, "The Economics of the New England Fishing Industry . . .," p. 30). Data on transportation costs are not available for other periods.

[36]See note 35.

[37]See appendix to chapter.

[38]White, pp. 91ff., 114-115; U.S., Congress, House of Representatives, Hearings before the Subcommittee on the Fisheries and Wildlife Conservation of the Committee on Merchant Marine and Fisheries, "Problems of the Fishing Industry," 81st Cong., 1st sess., Feb. 1949, pp. 50-52; "New England Producers Seek Relief from Imports," Atlantic Fisherman, 32:11 (Dec. 1951), p. 28; U.S., Congress, "Fisheries Legislation," p. 162; Committee on New England, pp. 43-46.

[39]Edward L. Lynch, Richard M. Doherty, and George P. Draheim, "The Groundfish Industries of New England and Canada," U.S. Fish and Wildlife Service, Circular 121, Washington, D.C., July 1961, Tables VI-7 and VI-7b, pp. 177 and 179.

[40]Ibid. These estimates of changes in costs are approximate. No systematic data on costs exist for New England boats. These estimates are based on average costs for very small samples of boats, the ones who would provide financial information to researchers--five Boston trawlers over 200 gross tons; six Boston, five Gloucester, and five Maine trawlers of 150 to 199 gross tons. The boats may not have been representative of the New England fleet, and the sample included no boats from 60 to 150 gross tons which made up about 60 percent of the offshore groundfish fleet. Furthermore, costs per pound of fish landed change with fishing effort. Canadian boats were landing at least two times more fish than New England boats of the same size in the sample and were spending more time on the fishing banks. Therefore, it is somewhat artificial to equate costs per pound of fish for New England and Canadian boats. It should be noted that the Canadian boats were not in an enviable position. They nearly always lost money, too.

[41]U.S., Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Atlantic and Pacific Groundfish, 1932-72, Basic Economic Indicators, C.F.S. no. 6271, Table I-1, p. 1; John Proskie, "Costs and Earnings of Selected Fishing Enterprises, Atlantic Provinces, 1964," Economic Services, Department of Fisheries of Canada, Ottawa, 1967, pp. 82, 92.

[42]Lynch, et al. Tables V-7 and V-8, pp. 162-163.

[43]U.S., Congress, Senate, Hearing before Select Committee on Small Business, "Economic and Loan Problems Confronting the Fisheries Industry," 94th Cong., 1st sess., Portland, Maine, Feb. 17, 1975, pp. 178ff.; testimony at meetings of New England Fishery Management Council, 1977-79; Mary Lord, interviews with Gloucester fishermen, fall 1978; Margaret Dewar, Ronald Lake, Mary Lord, Deborah Wishner, and

Julia Wondolleck, "The Fishing Industry of Chatham and Its Importance to the Town" (Department of Urban Studies and Planning, Massachusetts Institute of Technology), Aug. 1978, pp. 16-18; U.S., Congress, "Fishing Vessel Subsidies," pp. 149-150. See chapter 6. The opposition to unequal aid programs was always strongest among inshore rather than offshore fishermen.

[44]Lynch, et al., Table V-12, p. 167. This was the average original cost of Maine trawlers of 150 to 199 gross tons.

[45]U.S., Bureau of the Census, Statistical Abstract of the United States: 1961 (Washington, D.C.: GPO, 1961), pp. 458, 461.

[46]Mary Lord and Meta Cushing, interviews with Gloucester fishermen about the 1950s and 1960s, 1978-1979.

[47]See chapter 3.

[48]"O'Hara Launches Subsidy Vessels," National Fisherman, 52:6 (Oct. 1971), pp. 14A-15A; "Maine Dragger Fleet Upgraded with Large New Steel Vessel," The Fish Boat, 12:10 (Oct. 1967), pp. 37-38; U.S., Congress, House of Representatives, Hearings before Subcommittee on Fisheries and Wildlife Conservation of Committee on Merchant Marine and Fisheries, "U.S. Fishing Fleet Improvement Act," 91st Cong., 1st sess., June 1969, pp. 39-40; U.S., Congress, "Fishing Vessel Subsidies," p. 146; O'Brien, et al., "New England Fisheries--Annual Summary . . .," 1963-65; ICNAF, "List of Fishing Vessels, 1971, with Summaries of Fishing Effort for 1969, 1970, and 1971," Dartmouth, Nova Scotia, Canada, 1972.

[49]"Fishermen Neglecting 'Big Catch,'" National Fisherman, 52:1 (May 1971), p. 6A; "O'Hara Launches Subsidy Vessels," p. 14A.

[50]ICNAF, "List of Fishing Vessels and Summary of Fishing Effort in the ICNAF Convention Area, 1965," Dartmouth, Nova Scotia, Canada, Jan. 1967; tabulations of landings and number of trips from "Fishery Market News Report" (daily), Market News Service, Bureau of Commercial Fisheries, Boston, Mass., 1966.

[51]ICNAF, "List of Fishing Vessels and Summary of Fishing Effort in the ICNAF Convention Area, 1965"; John J. Murray, "Safety for Commercial Fishing Vessel and Crew," Commercial Fisheries Review, 30:6 (June 1968), pp. 46-47.

[52]The "Massachusetts" had no equipment that other boats did not have, according to Thomas Fulham. Newer technology would have added to the costs of the boat and made it too expensive to build (U.S., Congress, "Fishing Vessel Subsidies," pp. 71-72).

[53]Estimated from number of boats over sixty gross tons that used otter trawls to fish offshore in 1959 and were not based in New Bedford. Some of the boats may have fished for flounder, but, on the other hand, some of the New Bedford boats may have been in the groundfish industry (ICNAF, "List of Vessels Over 50 Gross Tons Fishing in the ICNAF Convention Area in 1959").

[54]Generalizations about levels of sustainable yield are probably truer for haddock than for cod about which less is known. Dr. F.M. Serchuk, Northeast Fisheries Center, Woods Hole, Mass., personal communication, Aug. 1978; Richard C. Hennemuth, "Status of the Georges Bank Haddock Fishery," ICNAF Research Document 69/90, June 1969; Steve Clark, "Current Status of the Georges Bank (5Ze) Haddock Stock," ICNAF Research Document 75/48, June 1975; New England Regional Fishery Management Council, "Atlantic Groundfish," Supplement No. 2 to Final Environmental Impact Statement, draft, May 1978, p. 9; ICNAF, Redbook, Pt. II, "Research Reports by Member Countries," "United States Research Report, 1965" (Dartmouth, Nova Scotia, Nov. 1966), pp. 109-111.

[55]Clark, "Current Status of the Georges Bank (5Ze) Haddock Stock," p. 2; ICNAF, Redbook, Pt. II, 1966, p. 109.

[56]New England Regional Fishery Management Council, "Atlantic Groundfish," p. 9; Serchuk, Aug. 1978.

[57]Ralph K. Mayo, "A Preliminary Assessment of the Redfish Fishery in ICNAF Subarea 5," ICNAF Research Document 75/59, June 1975, pp. 3-6; Ralph K. Mayo, Northeast Fisheries Center, Woods Hole, Mass., personal communication, Jan. 1978.

[58]E. J. Working, "What Do 'Statistical Demand' Curves Show?" Quarterly Journal of Economics, 41:2 (Feb. 1927), pp. 212-235, reprinted in American Economic Association, Readings in Price Theory (Chicago: Richard D. Irwin, 1952), pp. 97-115; Roger E. Bolton, "Comment," in Bell and Hazleton, pp. 40-44; Ronald J. Wonnacott and Thomas H. Wonnacott, Econometrics (New York: John Wiley and Sons, 1970), chap. 8.

[59]See chapter 2.

[60]Fishery Statistics of the United States, 1955, 1960; tabulations of trip data for 1965, Northeast Fisheries Center, National Marine Fisheries Service, Woods Hole, Mass.

[61]For a review of bioeconomic theory, see Colin W. Clark, Mathematical Bioeconomics: The Optimal Management of Renewable Resources (New York: John Wiley and Sons, 1976).

[62]Frederick W. Bell assumed demand was infinitely elastic (Frederick W. Bell, "Technological Externalities and Common-Property Resources: An Empirical Study of the U.S. Northern Lobster Fishery," Journal of Political Economy, 80:1 (Jan.-Feb. 1972), pp. 148-158). John Gates and Virgil Norton estimated demand with a single equation using quarterly data and then substituted the parameters into equations to estimate supply (John M. Gates and Virgil J. Norton, "The Benefits of Fisheries Regulation: A Case Study of the New England Yellowtail Flounder Fishery," Marine Technical Report No. 21, University of Rhode Island, Kingston, R.I., 1974).

[63]Bell, "The Economics of the New England Fishing Industry . . .," pp. 33-41; Vincent F. Dunfey, "A Study of the Economic Factors Affecting the Demand for New England Cod and Haddock," Bureau of Business Research, Boston College, Aug. 1961; Darrell A. Nash and Frederick W. Bell, "An Inventory of Demand Equations for Fishery Products," Bureau of Commercial Fisheries, Working Paper No. 10, July 1969, equations 4a, 9a, 14; Darrel A. Nash, "Demand for Fish and Fish Products with Special Reference to New England," in Bell and Hazleton; Frederick V. Waugh and Virgil J. Norton, "Some Analyses of Fish Prices," unpublished, undated manuscript submitted to Bureau of Commercial Fisheries (files of Market Research Division, National Marine Fisheries Service, Washington, D.C.); John J. Houtsma, "The Effects of Imports on United States Groundfish Prices," File Manuscript No. 172, Economic Research Division, National Marine Fisheries Service, July 1970; Joseph F. Farrell and Harlan C. Lampe, "The New England Fishing Industry: Functional Markets for Finned Food Fish II," No. 3, Bulletin 380, Agricultural Experiment Station, University of Rhode Island, Kingston, R.I., 1965, pp. 5-7. Identification issues are the only problems discussed here, but many studies have other shortcomings as well. Some use price and quantity from different market levels, for example. A few use quantity as the dependent variable although the single equation form implies that quantity is not influenced by price.

[64]Frederick W. Bell, "The Pope and the Price of Fish," American Economic Review, 58:5, pt. 1 (Dec. 1968), pp. 1346-1350; Nash and Bell, "An Inventory of Demand Equations for Fishery Products," equation 11 by Bell.

[65]Bell, "Pope and the Price of Fish," p. 1349.

[66]Farrell and Lampe, pp. 20-21.

CHAPTER 5

FOREIGN FLEETS AND QUESTIONS OF FISHERIES CONTROL

[1]John J. O'Brien, "New England Fisheries--Annual Summary, 1960," Market News Service, Bureau of Commercial Fisheries, Boston, Mass., p. 11; "Soviet Trawler Is Discovered Off L.I. Near Polaris Submarine on Maneuvers," New York Times, April 30, 1960, p. 1; "Soviet Defector in U.S. Warns Moscow Has Nuclear-Raid Plan," New York Times, Sept. 15, 1960, pp. 1, 2.

[2]"Red Fleet Sweeping Georges Bank," National Fisherman, 42:6 (Oct. 1961), p. 2; "Russian Vessels Push to Edge of U.S. Waters," National Fisherman 42:8 (Dec. 1961), p. 3.

[3]O'Brien, "New England Fisheries--Annual Summary, 1961," pp. 8-9; Robert A. Hall and Henry R. McAvoy, "New England Fisheries--Annual Summary, 1963," p. 14; Leah J. Smith and Susan B. Peterson, "The New England Fishing Industry: A Basis for Management," Technical Report 77-57, Woods Hole Oceanographic Institution, Aug. 1977, p. 16 (from International Commission for the Northwest Atlantic Fisheries [hereafter ICNAF] data); U.S., Congress, House of Representatives, Hearings before the Committee on Merchant Marine and Fisheries, "Fishing in U.S. Territorial Waters," 88th Cong., 2d sess., Feb. 1964, p. 50; Tim Sullivan, "The 200-Mile Limit: Three Views; The Fishermen--No Fish Means No Spawning Means No Security," Gloucester Daily Times, March 18, 1974, p. 13; U.S., Congress, Senate, Hearings before Committee on Commerce, "Interim Fisheries Zone Extension and Management Act of 1973," 93rd Cong., 2d sess., April-June 1974, p. 918.

[4]U.S., Congress, "Fishing in U.S. Territorial Waters," p. 50; U.S., Congress, "Interim Fisheries Zone Extension and Management Act of 1973," p. 840; "Russian Vessels Push to Edge of U.S. Waters," p. 3.

[5]Charles R. Hitz, "Catalogue of the Soviet Fishing Fleet," National Fisherman, 48:13 (April 30, 1968), pp. 9-24; Comptroller General of the United States, "The U.S. Fishing Industry--Present Condition and Future of Marine Fisheries" (Washington, D.C.: GAO, Dec. 23, 1976), vol. II, pp. 337-349, 360-371; Commander Adrian L. Lonsdale, "'No Contest' on the Fishing Grounds," U.S. Naval Institute Proceedings, vol. 94 (July 1968), pp. 62-70.

[6]Hitz, pp. 9-24; Comptroller General of the United States, pp. 337-349, 360-371; Lonsdale, pp. 62-70.

[7]U.S., Congress, "Fishing in U.S. Territorial Waters," p. 55; Lena Novello, Gloucester, Mass., personal communication, Oct. 1978.

[8]Smith and Peterson, pp. 16, 17; "Magnuson Fisheries Management and Conservation Act," Report of the Senate Committee on Commerce on S. 961, Oct. 7, 1975, in U.S., Congress, Senate, Committee on Commerce, "A Legislative History of the Fishery Conservation and Management Act of 1976," p. 669.

[9]O'Brien, et al., "New England Fisheries--Annual Summary . . .," 1961-1971; "Soviets Plan Big Fleet Expansion; May Agree to Conservation Moves," National Fisherman, 47:8 (Dec. 1966), p. 4A; "Are NW Atlantic Banks Being Overfished?" National Fisherman, 47:8 (Dec. 1966), p. 3A; Richard C. Hennemuth, "Status of the Georges Bank Haddock Stock and Effects of Recent High Levels of Fishing Effort," ICNAF Research Document 68/92; "Haddock, Herring, Yellowtail Suffering from Overfishing," National Fisherman, 52:2 (June 1971), p. 1A.

[10]"Are NW Atlantic Banks Being Overfished?" National Fisherman, 47:8 (Dec. 1966), p. 3A; Charles Buffum, "Haddock, Scallops to Be Scarcer on Banks in '67; Control Is Debated," National Fisherman, 47:10 (Feb. 1967), p. 15A; O'Brien, "New England Fisheries--Annual Summary . . .," 1969 (p. 2), 1970 (p. 2).

[11]U.S., Congress, House of Representatives, Hearings before Committee on Merchant Marine and Fisheries, "Fishing Vessel Subsidies," 88th Cong., 1st sess., Aug. 1963, pp. 62, 54.

[12]The "bag" is the cod end of the net on a trawler. A "big bag" is a large catch of fish in a single trawl or just a large catch of fish.

[13]Meta Cushing, interviews with Gloucester fishermen and their wives about careers, 1978-79; Salvatore Testaverde, National Marine Fisheries Service, Gloucester, Mass., personal communication, fall 1978.

[14]See, for example, James Ackert's comments in U.S., Congress, "Fishing in U.S. Territorial Waters," pp. 175-176; "Red Fleet Sweeping Georges Bank," p. 2.

[15]U.S., Congress, "Fishing Vessel Subsidies"; U.S., Congress, Senate, Hearings before Committee on Commerce, "Twelve-Mile Fishery Zone," 89th Cong., 2d sess., May 1966; U.S., Congress, House of Representatives, Hearings before Committee on Merchant Marine and

Fisheries, "Fishing Rights" in "Miscellaneous Fisheries Legislation, Part 1," 89th Cong., 2d sess., May-June 1966.

[16] U.S., Congress, "Fishing in U.S. Territorial Waters," pp. 175-176; U.S., Congress, "Fishing Rights," p. 344.

[17] O'Brien, "New England Fisheries--Annual Summary, 1969," p. 2; "Discussion of Industry Problems Aired at Gloucester Conference," The Fish Boat, 18:5 (May 1973), pp. 21ff.; Salvatore Favazza, "U.P.I.," undated (notes in files of Gloucester Fisheries Commission).

[18] U.S., Congress, House of Representatives, Hearings before Committee on Merchant Marine and Fisheries, "Fishery Jurisdiction," 93rd Cong., 2d sess., May-Oct. 1974, pp. 511-512, 294, 1; U.S., Congress, Senate, Hearings before Committee on Commerce, "Interim Fisheries Zone Extension and Management Act of 1973," 93rd Cong., 2d sess., April-June 1974, pp. 52-53, 872, 129.

[19] U.S., Congress, "Fishery Jurisdiction," pp. 101, 67.

[20] Earnings include those of a few offshore lobster boats and purse seiners, but almost all were groundfish boats (see ICNAF, "List of Fishing Vessels, 1971 with Summaries of Fishing Effort for 1969, 1970, and 1971," Dartmouth, Nova Scotia, Canada, 1972; and ICNAF, "List of Fishing Vessels, 1974," Dartmouth, Nova Scotia, Canada, 1976). One cannot distinguish between Boston and Gloucester because a large share of Boston landings came from large Gloucester boats. Gross national product rose 19.7 percent in the same years.

[21] ICNAF, "List of Fishing Vessels, 1971 . . ."; ICNAF, "List of Fishing Vessels, 1974." The numbers may be quite unreliable; it is very difficult to enumerate boats accurately. However, the direction of the change is probably correct.

[22] John Enos, "Gloucester Skippers Diversify, Boost 1973 Landings Over Top," National Fisherman, 54:12 (April 1974), p. 13A; John Enos, "'74 Was Good to Gloucester Despite Inflation, Less Fish," National Fisherman, 55:13 (April 30, 1975), p. 71; James Ackert, personal communication, fall 1977; tabulations of trip data for 1974 and 1976, National Marine Fisheries Service, Northeast Fisheries Center, Woods Hole, Mass.; ICNAF, "List of Fishing Vessels, 1971 . . ."; ICNAF, "List of Fishing Vessels, 1974"; Sullivan, "The 200-Mile Limit: Three Views . . .,"

p. 13; Brooks Townes, "New England Fishing--Back from the Brink?" National Fisherman, 49:13 (April 30, 1975), p. 22. Trends were not so favorable outside the offshore groundfish industry in other ports. These generalizations are true only for offshore groundfish.

[23]U.S., Congress, "Fishery Jurisdiction," p. 61; Sullivan, "The 200-Mile Limit: Three Views . . .," p. 13.

[24]Townes, "New England Fishing--Back from the Brink?" p. 22; Peter K. Prybot, "First New Dragger Since '70 Is Fishing Out of Gloucester," National Fisherman, 56:2 (June 1975), p. 5C; Enos, "'74 Was Good to Gloucester Despite Inflation, Less Fish," p. 71.

[25]U.S., Congress, "Fishing Rights," p. 344; U.S., Congress, House of Representatives, Hearings before Committee on Merchant Marine and Fisheries, "Fisheries Agreements and Negotiations," 90th Cong., 1st and 2d sess., Dec., Feb. 1968, p. 7.

[26]U.S., Congress, "Twelve-Mile Fishery Zone," p. 165; U.S., Congress, "Fishing Rights," p. 323. New Bedford did suffer from foreign fishing pressures. Canadians harvested large quantities of scallops on Georges Bank, but the Canadians were not among the foreigners most fishermen complained about.

[27]U.S., Congress, House of Representatives, Hearings before Committee on Merchant Marine and Fisheries, "Soviet Fishing Violations" in "Commercial Fisheries," 92d Cong., 1st sess., May 1971, p. 551; U.S., Congress, "Interim Fisheries Zone Extension and Management Act of 1973," p. 852; Buell Hollister, "Offshore Lobster Trapping," National Fisherman, 51:13 (April 30, 1971), p. 61; "Offshore Gear War Cooled But Not Over," National Fisherman, 52:3 (July 1971), p. 4A; Burton T. Coffey, "Offshore Gear War Continues; U.S. Firm Tries to Fight Back," National Fisherman, 52:4 (Aug. 1971), p. 3A; Burton T. Coffey, "Over-exploitation, Offshore Wars Clouding Lobster Fishing Future," National Fisherman, 52:13 (April 30, 1972), p. 92; "Atlantic Offshore Fisheries Association . . .," advertisement, National Fisherman, 53:1 (May 1972), p. 5A; H.V.R. Palmer, Jr., "Young Cape Cod Company Irked by Lack of Support, Foreign Boats," National Fisherman, 53:12 (April 1973), p. 7C; H.V.R. Palmer, Jr., "Cape Cod Lobsterman Grapples with Offshore Gear Loss Crisis," National Fisherman, 54:2 (June 1973), p. 11A; "Offshore Gear Conflicts Simmer," National Fisherman, 54:10 (Feb. 1974), p. 17C; Brooks Townes, "U.S. Lobsterman's Loss Aired by Claims Panel," National Fisherman, 56:2 (June 1975), p. 2A; Brooks Townes,

"Lobstermen Are Irate After Claims Hearings," National Fisherman, 57:1 (May 1976), p. 2A.

[28]U.S., Congress, House of Representatives, Hearings before Committee on Merchant Marine and Fisheries, "Territorial Seas," 93rd Cong., 1st sess., May, June 1973, p. 104 and other comments.

[29]Allan J. Ristori, "Save America's Marine Resources; 200 Mile Limit . . . Now!" National Fisherman, 53:13 (April 30, 1973), p. 62.

[30]Burton T. Coffey, "Changes in Federal Policies Goal of New England Fisheries Group," National Fisherman, 52:7 (Nov. 1971), p. 8C.

[31]U.S., Congress, "Territorial Seas," p. 108; "NFF Underwrites Plan Organizing U.S. Fishermen," National Fisherman, 54:2 (June 1973), p. 12A.

[32]John Enos, "Gloucester Fishermen Respond to Unity Move," National Fisherman, 51:12 (April 1971), p. 15B; James Ackert, Gorton Corporation, Gloucester, Mass., personal communication, March 1978.

[33]U.S., Congress, House of Representatives, Hearings before Committee on Merchant Marine and Fisheries, "Fisheries Jurisdiction," 94th Cong., 1st sess., March 1975, pp. 1-2.

[34]U.S., Congress, "Fishing Rights"; U.S., Congress, "Twelve-Mile Fishery Zone"; Novello, fall 1977.

[35]The groundfish industry focused efforts on ICNAF, but other sectors of the industry negotiated many other multilateral agreements which this discussion did not evaluate. Rhode Island fishermen pressured the State Department to make bilateral agreements to restrict foreign fishing off the mid-Atlantic states in the late 1960s before this area came under ICNAF jurisdiction. The State Department and offshore lobstermen negotiated gear marking regulations and worked out claims procedures for lobstermen to obtain payments for damages from the foreign countries whose boats destroyed their gear (see U.S., Congress, "Fisheries Agreements and Negotiations"; U.S., Congress, "Soviet Fishing Violations"; James Ostergard, "Facts Behind U.S.--Soviet Pact Told; Aims to Save Atlantic Coast Stocks," National Fisherman, 48:9 [Jan. 1968], p. 3A; Townes, "U.S. Lobsterman's Loss Aired by Claims Panel," p. 2A; Townes, "Lobstermen Are Irate After Claims Hearings," p. 2A).

[36]U.S., Congress, Senate, Hearings before Committee on Foreign Relations, "The Fisheries Conventions," 81st Cong., 1st sess., July 14, 1949, pp. 6, 48-49, 51.

[37]William C. Herrington, "A Crisis in the Haddock Fishery," Circular 4, Fish and Wildlife Service, 1941; U.S., Congress, "The Fisheries Conventions," p. 86 (In these years the U S. was the only nation which took significant amounts of haddock from Georges Bank, but other nations could have started to do so.); "Advisory Group on Treaty Favors Minimum Mesh Size," Atlantic Fisherman, 32:3 (April 1951), p. 27; Herbert W. Graham, "A Minimum Net-Mesh Size for the New England Haddock Fishery," Commercial Fisheries Review, 14:12 (Dec. 1952), pp. 1-5; John J. O'Brien, "Landings and Prices of Fishery Products, Boston Fish Pier, 1951," Fish and Wildlife Service, Market News Service, Boston, Mass., p. 12; Thomas J. Risoli, "Landings and Prices of Fishery Products, Boston Fish Pier, 1952," p. vi.

[38]O'Brien, et al., "Landings and Prices of Fishery Products, Boston Fish Pier . . .," 1956 (p. vi), p957 (p. 5-6), 1959 (p. 5-6), 1960 (p. 5), 1961 (p. 4), 1962 (p. 5), 1963 (p. 4).

[39]See ICNAF research documents and other publications.

[40]International Convention for the Northwest Atlantic Fisheries in U.S., Congress, "The Fisheries Conventions," pp. 8-15.

[41]Ibid.

[42]U.S., Congress, "Twelve-Mile Fishery Zone," p. 97; International Convention for the Northwest Atlantic Fisheries; U.S., Congress, "Interim Fisheries Zone Extension and Management Act of 1973," pp. 816-817.

[43]U.S., Congress, "Interim Fisheries Zone Extension and Management Act of 1973," pp. 816-817.

[44]"ICNAF Sidesteps Atlantic Fishing Crisis," National Fisherman, 52:4 (Aug. 1971), p. 4A; "National Quotas Set for East Coast Species," National Fisherman, 53:4 (Aug. 1972), p. 4A; "Fishing Pressure to Ease in East," National Fisherman, 54:9 (Jan. 1974), p. 3A.

[45]Burton T. Coffey, "ASMFC Weighs Management, Foreign Fishing," National Fisherman, 52:8 (Dec. 1971), p. 11A; U.S., Congress, "Interim

Fisheries Zone Extension and Management Act of 1973," p. 31.

[46]"National Quotas Set for East Coast Species," p. 5A; Burton T. Coffey, "Control of Foreign Fishing Sought; Advisors Urge U.S. to Quit ICNAF," National Fisherman, 53:3 (July 1972), p. 3A; Burton T. Coffey, "U.S. Beefs Up Stand on Fisheries Control, Ending ICNAF Participation Now Seen As Possibility," National Fisherman, 54:4 (Aug. 1973), p. 4A; see below for discussion of Conference on the Law of the Sea and extension of fishery jurisdiction to 200 miles.

[47]U.S., Congress, "Fishery Jurisdiction," pp. 44-45, 109.

[48]Ibid., p. 45.

[49]U.S., Congress, "Interim Fisheries Zone Extension and Management Act of 1973," p. 912.

[50]Brooks Townes, "Fishermen Blast ICNAF Control," National Fisherman, 55:11 (March 1975), p. 3A.

[51]Burton T. Coffey, "Fishing Agreements Prove of Small Value," National Fisherman, 54:1 (May 1973), p. 2A; U.S., Congress, "Interim Fisheries Zone Extension and Management Act of 1973," p. 894; U.S., Congress, "Fishery Jurisdiction," p. 64.

[52]"Boats Face Fines for Landing Haddock; Outlook Very Bleak," National Fisherman, 51:9 (Jan. 1971), p. 3A.

[53]"Offshore Problems Debated at R.I. Forum," National Fisherman, 53:1 (May 1972), p. 4A; "N. Bedford Fishermen Air Gripes on ICNAF, Nets," National Fisherman, 52:11 (March 1972), p. 2A.

[54]"Fishermen Blast ICNAF Control," p. 3A; "National Quotas Set for East Coast Species," p. 4A.

[55]"Fishermen Blast ICNAF Control," p. 3A; Brooks Townes, "Soviets Board American Boats to Seek Out ICNAF Violators," National Fisherman, 56:4 (Aug. 1975), p. 3A; Tim Sullivan, "6 Britishers Load Up on Haddock," National Fisherman, 55:8 (Dec. 1974), p. 22A.

[56]U.S., Congress, Senate, Hearings before Committee on Commerce, "Emergency Marine Fisheries Protection Act of 1975," 94th Cong., 1st sess., June, Sept. 1975, p. 184.

[57]Arthur H. Dean, "The Geneva Conference on the Law of the Sea: What Was Accomplished," American Journal of International Law, 52:4 (Oct. 1958), p. 607.

[58]Ibid., pp. 614, 607-608.

[59]Arthur H. Dean, "The Second Geneva Conference on the Law of the Sea: The Fight for Freedom of the Seas," American Journal of International Law, 54:4 (Oct. 1960), pp. 751-789.

[60]Dean, "The Geneva Conference on the Law of the Sea . . .," p. 615; Dean, "The Second Geneva Conference on the Law of the Sea . . .," p. 776. The fact that Dean made these statements suggests that someone was telling him that New England fishing interests would be hurt, but there is no record of who did so or how. Fishing industry publications made no note of the conferences (see National Fisherman, 1958-1960; O'Brien, "Landings and Prices of Fishery Products, Boston Fish Pier, 1958"; O'Brien, "New England Fisheries--Annual Summary, 1960").

[61]Convention on the Continental Shelf, in U.S., Congress, "Territorial Seas," pp. 69-71, 69; Convention on Fishing and Conservation of the Living Resources of the High Seas, in U.S., Congress, "Fisheries Jurisdiction," pp. 139-145, Articles 6 and 7; Dean, "The Geneva Conference on the Law of the Sea . . ."

[62]"Parties to 1958 Geneva Law of Sea conventions," in U S., Congress, "Territorial Seas," pp. 67-68; P.L. 88-308, 88th Cong., 2d sess., 1964; "High Seas Fisheries Conservation Act of 1973," discussions in U.S., Congress, "Territorial Seas."

[63]"Parties to 1958 Geneva Law of Sea Conventions"; ICNAF gained authority over the mid-Atlantic area in the early 1970s.

[64]"Wide Gulf Exists Between Nations with Regard to Fisheries Limits," National Fisherman, 52:10 (Feb. 1972), p. 3A; Burton T. Coffey, "U.S. Revises Stand on Limits; Fishermen's Interests Reflected," National Fisherman, 53:2 (June 1972), p. 3A; Burton T. Coffey, "U.S., Soviets Tentatively Accept 200-Mi. Limitation at Caracas," National Fisherman,

55:5 (Sept. 1974), p. 3A; Gerard Mangone, Marine Policy for America: the United States at Sea (Lexington, Mass.: Lexington Books, 1977), pp. 155ff.; John R. Stevenson and Bernard H. Oxman, "The Third United Nations Conference on the Law of the Sea: the 1974 Caracas Session," American Journal of International Law, 69:1 (June 1975), especially p. 17.

[65]Coffey, "U.S. Revises Stand on Limits; Fishermen's Interests Reflected," p. 3A; Coffey, "U.S., Soviets Tentatively Accept 200-Mi. Limitation at Caracas," p. 3A.

[66]"Ideas Offered in Struggle for a Sea Policy--NFF Meeting Adopts Position on Coastal Fish," National Fisherman, 52:5 (Sept. 1971), p. 4A; "Ideas Offered in Struggle for a Sea Policy--New Control Suggested for Shelf Stocks," National Fisherman, 52:5 (Sept. 1971), p. 4A. National Federation of Fishermen had not expanded to the East Coast by 1971.

[67]Burton T. Coffey, "Fishermen Get LOS Recognition," National Fisherman, 53:1 (May 1972), p. 3A; "Wide Gulf Exists Between Nations with Regard to Fisheries Limits," p. 3A; Mangone, p. 155.

[68]Coffey, "Fishermen Get LOS Recognition," p. 3A; Coffey, "U.S. Revises Stand on Limits; Fishermen's Interests Reflected," p. 3A.

[69]John R. Stevenson and Bernard H. Oxman, "The Third United Nations Conference on the Law of the Sea: the 1975 Geneva Session," American Journal of International Law, 65:4 (Oct. 1975), pp. 763ff.; U.S., Congress, House of Representatives, Hearings before Committee on International Relations, "Potential Impact of the Proposed 200-Mile Fishing Zone on U.S. Foreign Relations," 94th Cong., 1st sess., Sept. 1975, pp. 28-31; U.S., Congress, "A Legislative History of the Fishery Conservation and Management Act of 1976," pp. 828-829.

[70]U.S., Congress, "Potential Impact . . .," p. 33.

[71]Reference to Convention on the Territorial Sea and the Contiguous Zone in U.S., Congress, "Fishing in U.S. Territorial Waters," p. 13; Dean, "The Geneva Conference on the Law of the Sea . . .," p. 614; U.S., Congress, "Fishing in U.S. Territorial Waters," pp. 9, 24; P.L. 88-308.

[72]U.S., Congress, "Fishing Rights," p. 248; U.S., Congress, "Twelve-Mile Fishery Zone"; P.L. 89-658, 89th Cong., 2d sess., 1966.

[73]U.S., Congress, "Fishing Rights," pp. 323-324; U.S., Congress, "Twelve-Mile Fishery Zone," pp. 95, 101.

[74]See chapter 3.

[75]Burton T. Coffey, "Lobsters Top List in Move toward Regional Management," National Fisherman, 53:6 (Oct. 1972), p. 3A; Burton T. Coffey, "Mass. Declares Lobster Control to 200 Miles: Gov. Sargent Forces Issue as U.S. Lags," National Fisherman, 54:2 (June 1973), p. 2A; U.S., Congress, "Territorial Seas." The state controls would have been on inshore lobstering while foreigners exploited the offshore stocks. Unless these lobster stocks mingled, exploitation of one would not necessarily affect the status of the other.

[76]U.S., Congress, "Territorial Seas."

[77]U.S., Congress, "Territorial Seas," p. 17.

[78]U.S., Congress, "Territorial Seas," pp. 66, 67.

[79]P.L. 93-242, 93rd Cong., 1st sess., 1973; Steve A. Saft, "First Vessel Nabbed Taking Lobsters on Shelf," National Fisherman, 55:6 (Oct. 1974), p. 17A; Tim Sullivan, "U.S. Set to Enforce Shelf Law; 200-Mile Limit Due Within Year," National Fisherman, 55:9 (Jan. 1975), p. 28A; U.S., Congress, "Fisheries Jurisdiction," p. 113.

[80]U.S. Congress, "Territorial Seas," National Federation of Fishermen statement, pp. 108-110; U.S., Congress, "Fisheries Jurisdiction," National Federation of Fishermen statements, pp. 233-253; "Eastland Resolution" quoted in U.S., Congress, "Legislative History of the Fishery Conservation and Management Act of 1976," p. 908.

[81]U.S., Congress, "Potential Impact . . .," pp. 28-29.

[82]U.S., Congress, "Fisheries Jurisdiction," pp. 7-46, 234-235; U.S., Congress, "Interim Fisheries Zone Extension and Management Act of 1973," pp. 5-22.

[83]Fishery Conservation and Management Act of 1976, P.L. 94-265, 94th Cong., 2d sess., 1976, Title II.

[84]P. L. 94-265, sec. 302.

[85]P. L. 94-265, sec. 303, sec. 3(18).

[86]P. L. 94-265, sec. 301.

[87]U. S., Congress, "Territorial Seas," p. 101; U. S., Congress, "Fisheries Jurisdiction," p. 240.

[88]U. S., Congress, "Territorial Seas," pp. 230, 122; Bill Mustard and Lucy Sloan, "Two Views on Possibilities of 200-Mile Limit: It's a Sure Thing Say 2 Observers," National Fisherman, 55:4 (Aug. 1974), p. 5A.

[89]U. S., Congress, "Territorial Seas," pp. 24-25, 45-48.

[90]U. S., Congress, "Fisheries Jurisdiction," p. 245.

[91]The Truman Proclamation of Sept. 28, 1945, declared that the United States could establish conservation zones to protect its coastal fisheries from overfishing; that in order to protect fisheries the U. S. could act unilaterally where only American fishermen were concerned and in conjunction with other nations where others shared the resource; and that the U. S. recognized the right of other nations to take similar steps to protect their coastal fisheries. See "Proclamation by President Harry S. Truman . . ." in U. S., Congress, "Twelve-Mile Fishery Zone," p. 33.

[92]U. S., Congress, "Fisheries Jurisdiction," pp. 174-175.

[93]Stevenson and Oxman, "The Third United Nations Conference on the Law of the Sea: the 1975 Geneva Session," pp. 778-779; testimony of U. S. senators in U. S., Congress, Hearings before the Committee on Armed Services, "Extending Jurisdiction of the United States over Certain Ocean Areas," 93rd Cong., 2d sess., Oct. 1974.

[94]"Mass. Lobstermen Now Organizing Statewide Group to Help Industry," National Fisherman, 44:1 (May 1963), p. 10; Mike Brown, "Maine and Mass. Lobster Associations Move to Restrict Offshore Fishery," National Fisherman, 44:2 (June 1963); p. 10; Burton T. Coffey, "Maine Conference Calm Broken By Fishermen," National Fisherman, 53:3 (Aug. 1972), p. 4A; Farrell Davisson, "Commissioner Given Earful by Unhappy Me. Lobstermen," National Fisherman, 53:5 (Sept. 1972), p. 21A;

Burton T. Coffey, "Regional Lobster Managing Plan Progresses But Faces Rough Seas," National Fisherman, 53:8 (Dec. 1972), p. 3A; "New Fisheries May Ease Pressure on Lobster: Me. Fisheries Commissioner Weighs Management Ideas," National Fisherman, 53:10 (Feb. 1973), p. 4A; Burton T. Coffey, "New Lobster Management Plan Imperiled by Federal Decision," National Fisherman, 53:11 (March 1973), p. 3A; Farrell Davisson, "Me. Lobstermen's Groups Seek Areas of Agreement," National Fisherman, 55:6 (Sept. 1974), p. 4A; John Enos, "Steps Taken to Control Shrimping," National Fisherman, 53:11 (March 1973), p. 20A; William B. Walker, "Me., N.H., Mass. Act to Preserve Shrimp Fishery," National Fisherman, 54:5 (Sept. 1973), p. 4A; "Shrimp Law in Maine Faces Change," National Fisherman, 54:9 (Jan. 1974), p. 19A; "Gulf of Maine Shrimp Ban Brings Groans," National Fisherman, 56:5 (Sept. 1975), p. 32A; Norm Olsen, Jr., "Shrimping Begins on Low Note Following Three-Month Closure," National Fisherman, 56:8 (Dec. 1975), p. 10A; Tom V. Binmore, "Regional Management Seen As Cure for Ailing New England Shellfisheries," National Fisherman, 42:6 (Oct. 1961), p. 4; Burton T. Coffey, "Apollonio Hopes for Direct Management Control," National Fisherman, 53:11 (March 1973), p. 8C.

[95]Coffey, "Lobsters Top List in Move Toward Regional Management," p. 3A; Coffey, "New Lobster Management Plan imperiled by Federal Decision," p. 3A; Comptroller General of the United States, "Action Is Needed Now to Protect Our Fishery Resources" (Washington, D. C.: GAO, Feb. 18, 1976), pp. 9-15.

[96]U.S., Congress, "Fishery Jurisdiction," pp. 61, 105-106.

[97]U.S., Congress, "Fishery Jurisdiction," p. 109; U.S., Congress, "Emergency Marine Fisheries Protection Act of 1975," pp. 170-175; comments on Christy in Edward Wenk, Jr., The Politics of the Ocean (Seattle, Wash.: University of Washington Press, 1972); Francis T. Christy, Jr., and Anthony Scott, The Common Wealth in Ocean Fisheries (Baltimore, Md.: Johns Hopkins Press, 1972); Francis T. Christy, Jr., "Alternative Arrangements for Marine Fisheries: An Overview," RFF Program of International Studies of Fishery Arrangements, Paper No. 1, Resources for the Future, Washington, D. C., May 1973; James A. Crutchfield and Giulio Pontecorvo, The Pacific Salmon Fisheries: A Study of Irrational Conservation (Baltimore, Md.: Johns Hopkins Press, 1969).

[98]As the fishery management councils began operations, the actions of the Pacific Council were more influenced by academics than the actions of the New England Council. See comments on academic influence in Giulio Pontecorvo, "Fishery Management and the General Welfare: Implications of the New Structure," Washington Law Review, 52:3 (July 1977),

pp. 641-656; "Marine Fisheries Conservation Act of 1975," report of Committee on Merchant Marine and Fisheries, House of Representatives, Aug. 20, 1975, in U.S., Congress, "A Legislative History of the Fishery Conservation and Management Act of 1976," p. 1081.

[99] U.S., Congress, "Fisheries Jurisdiction," pp. 235, 238.

[100] U.S., Congress, "Fisheries Jurisdiction," p. 235.

[101] Unless otherwise noted, information in this section is drawn from statements at early meetings of the New England Fishery Management Council, and from Mary Lord and Meta Cushing, interviews with fishermen about their work histories and their impressions on fishery management, 1978-79.

[102] See discussion of ICNAF above; biologist, Northeast Fisheries Center National Marine Fisheries Service, Woods Hole, Mass., personal communication, May 1978.

[103] U.S., Congress, "Fisheries Jurisdiction," pp. 235, 250, 252.

[104] See discussion of ICNAF above.

CHAPTER 6

IMPLEMENTING FISHERY MANAGEMENT

[1]Jerry Murphy, "Gloucester's Brancaleones, New Dragger Owners, Are Veterans of Rugged Industry," National Fisherman, 45:5 (Sept. 1964), p. 22; Gloucester fisherman, statement at meeting of New England Fishery Management Council; Meta Cushing, interview with Gloucester fisherman, 1979.

[2]Peter K. Prybot, "Former Capitol City Lawyer Finds Fishing in Gloucester a Challenge," National Fisherman, 59:1 (May 1978), pp. 45, 53.

[3]Prybot, p. 45; Cushing, interviews, 1978-1979; Paul Langner, "200-Mile Limit Buoys N. E. Fishermen," April 27, 1977, Boston Globe, p. 1; Burton T. Coffey, "Effects of 200-Mile Limit Will Be Slow in Coming," National Fisherman, 56:13 (April 30, 1976), p. 6; Henry S. Galus, "NMFS Official Says Future Rests on Fisherman Attitude," National Fisherman, 56:11 (March 1976), p. 15A; Ed Francis, "Fishing Boat Demand Exceeds Supply," Boston Herald American, June 26, 1977, p. 20; Roger Farquhar, "N. E. Fish Catch Is Up, Experts Not Sure Why," Boston Sunday Globe, June 12, 1977, p. 1.

[4]Statements at meeting of New England Fisheries Steering Committee, July 1977, New Bedford, Mass.; Ken O. Botwright, "Has Limit Improved Fish Catch?" Boston Sunday Globe, April 3, 1977, p. 30; Stanley R. Tupper and George H. Taylor, "Five Years May See Big Revival of Long-Hurting Northeast Industry," National Fisherman, 57:7 (Nov. 1976), p. 14A.

[5]Timothy Dwyer, "Soviet Vessel Off Cape Cited But Not Seized," Boston Globe, April 3, 1977, p. 1; Paul Langner, "Fishermen Angry at Handling of Limit," Boston Sunday Globe, April 10, 1977, p. 21; Brooks Townes, "Who's In Charge? Is the Question Still Unanswered in 200-Mile Limit," National Fisherman, 58:2 (June 1977), p. 3A.

[6]"Trawler Incident Irks Kennedy, Studds," Boston Sunday Globe, April 3, 1977, p. 30; "Seizure--Who's to Know?" Maine Commercial Fisheries, 4:10 (May 1977), p. 9; Townes, "Who's in Charge? . . ."; Paul Feeney and Jerome Sullivan, "Soviet Fish Seized on Mother Ship; Trawler Impounded," Boston Globe, April 11, 1977, p. 5.

[7]Stephen F. Crimmin and Timothy Dwyer, "Coast Guard Seizes Russian Trawler," Boston Sunday Globe, April 10, 1977, p. 1; Feeney and Sullivan, "Soviet Fish Seized on Mother Ship; Trawler Impounded," p. 1; Mary Thornton, "Diplomats Key to Court Fate of Soviet Ships," Boston Globe, April 13, 1977, p. 1; "244,093 Pounds Is a Lot of Fish," Boston Globe, April 13, 1977, p. 10; Paul Langner, "Illegal Fish Found Ship Unloaders Say," Boston Globe, April 14, 1977, p. 5; Paul Langner, "Russian Ship Sails But Faces a Fine; Trawler Still Here," Boston Globe, April 15, 1977, p. 3; William F. Doherty, "Captain of Russian Trawler Told He May Face Prison Term and Fine," Boston Globe, April 16, 1977, p. 1; Paul Langner, "Were the Herring Illegal?" Boston Globe, April 16, 1977, p. 5; Jerome Sullivan and Paul Feeney, "Soviet Trawler Skipper Charged--Fish Reloaded," Boston Globe, April 29, 1977, p. 1.

[8]Coast Guard monthly reports on foreign fishing off the East Coast, Maine Commercial Fisheries, 1977.

[9]Letter from New England Regional Fishery Management Council to Cyrus R. Vance, Sept. 23, 1977; "Polish Trawler Seizure Blocked by State Department," Maine Commercial Fisheries, 5:4 (Nov. 1977), p. 24; "Interference of State Dept. Irks Council," National Fisherman, 58:8 (December 1977), p. 27A.

[10]Comments at meetings of the New England Fishery Management Council, fall 1977-spring 1978; Lucy Sloan, "State Department - 4 USCG - 1 1/2," Maine Commercial Fisheries, 4:10 (May 1977), p. 23.

[11]See chapter 5; Fishery Conservation and Management Act, P. L. 94-265, 94th Cong., 2d sess., Title II.

[12]Comments at meetings of the New England Fishery Management Council, fall 1977; Alan G. Guimond, "Organization Mediates Gear Conflicts," Maine Commercial Fisheries, 5:3 (Oct. 1977), p. 19.

[13]"Stock Assessment Questions Highlight Herring Hearing," Maine Commercial Fisheries, 4:10 (May 1977), p. 2; Tim Sullivan, "N. E. Council Asks Second Look at Herring Quota," National Fisherman, 58:2 (June 1977), p. 34A; Robin Alden Peters, "Where? When? How Old? Council Raises Herring Questions," Maine Commercial Fisheries, 4:12 (July 1977), p. 12; "Court Action Sought on Herring Quota," Maine Commercial Fisheries, 4:8 (March 1977), p. 1; "Herring Suit Appealed," Maine Commercial Fisheries, 5:1 (Aug. 1977), p. 1; "Foreigners Retain Herring Quota," Maine Commercial Fisheries, 5:2 (Sept. 1977), p. 1;

Ed Bradley, "Foreign Affairs and Fisheries," Maine Commercial Fisheries, 5:3 (Oct. 1977), p. 7.

[14]Comments at meeting of New England Fishery Management Council, Sept.-Nov. 1977; Melody Barlow, "Council Grapples with Administrative Problems," Maine Commercial Fisheries, 5:4 (Nov. 1977), p. 15.

[15]Information presented in this section comes from the meetings of the New England Fishery Management Council, fall 1977-spring 1979 and from documents, press releases, and other written material from the Council and from National Marine Fisheries Services. Also particularly useful for the study of the Council's work were Tim Sullivan's reporting in Gloucester Daily Times, Melody Barlow's reports of meetings in Maine Commercial Fisheries, and Robin Alden Peters's analyses of issues facing the Council in Maine Commercial Fisheries. Additional sources are noted.

[16]"Background and Reactions to the Regional Council Selections," Maine Commercial Fisheries, 4:1 (Sept. 1976), p. 14; Ed Bradley, "Feds Attempt to Regulate Regional Council," Maine Commercial Fisheries, 4:6 (Jan. 1977), p. 9.

[17]Lars Vidaeus and Joseph Mueller, "Management of the Commercial Groundfish Fishery Off the U.S. Northeast Coast," Discussion Paper, New England Fishery Management Council, November 1978, p. 37; Steve Saft, "First Quotas on N. England Fish Issued," National Fisherman, 58:1 (May 1977), p. 2A.

[18]P.L. 94-265, sec. 303; "Final Environmental Impact Statement for the Implementation of a Fishery Management Plan for Atlantic Groundfish --Haddock, Cod, Yellowtail Flounder," prepared by New England Regional Fisheries Management Council in consultation with the Mid-Atlantic Regional Fisheries Management Council, April 1977 [hereafter "Groundfish Plan"].

[19]"Groundfish Plan," pp. 132-134; P.L. 94-265, secs. 2, 3, 301; Robin Peters, "Where the Quotas Come From," Maine Commercial Fisheries, 5:1 (Aug. 1977), p. 17.

[20]Discussions with biologists at meetings of New England Fishery Management Council; presentation on stock assessment issues, Northeast Fisheries Center, Woods Hole, Mass., Oct. 1977; David E. Pierce and Patricia E. Hughes, "Insight into the Methodology and Logic Behind

National Marine Fisheries Service Fish Stock Assessments or How Did You Guys Come up with Those Numbers Anyway?" Commonwealth of Massachusetts, Executive Office of Environmental Affairs, January 1979.

[21]"Groundfish Plan," pp. 134-143, 155-157.

[22]"Groundfish Plan," pp. 134-143.

[23]Ibid.

[24]For members' names and affiliations, see "New England Regional Fishery Management Council," brochure with list of names.

[25]Tim Sullivan, "Fishermen Find Flaws in Cod, Haddock Rules," Gloucester Daily Times, Nov. 11, 1977, p. 1. Aside from these problems, NMFS depended on the dealers' good will to obtain data on landings, the most important component in NMFS's economic and biological data on which the Council and NMFS had to base fishery management decisions. NMFS agents were reluctant to involve the dealers in any enforcement issues.

[26]Robert S. Ryder, essay, Chatham, Mass., Sept. 15, 1977.

[27]Tim Sullivan, "Unrestricted Fishing Approved over Protest," Gloucester Daily Times, Dec. 8, 1977, p. 1.

[28]Sullivan, "Fishermen Discover Flaws . . .," p. 9.

[29]Tim Sullivan, "Fishermen Unwilling to Unite over Quota Fines," Gloucester Daily Times, December 22, 1977, p. 9.

[30]Newsletter, Massachusetts Inshore Draggermen's Association, January 16, 1978, p. 1.

[31]MIDA-CCCFC Plan, p. 1.

[32]Ryder, Sept. 15, 1977; Cushing, interview.

[33]Newsletter, Massachusetts Inshore Draggermen's Association, March 1978, p. 1.

[34]See chapter 5.

[35]This is not to say that appointees went unopposed; any candidate was usually opposed by groups pushing for someone else for the same position.

[36]Tim Sullivan, "Plans Drafted for Fish Quota," Gloucester Daily Times, March 24, 1978, p. 9.

[37]In some states industry opinion was more important than in others. For example, see "Apollonio Gets Solid Industry Approval," Maine Commercial Fisheries, 6:7 (Mar. 1979), pp. 20-21.

[38]No consumer representative ever came to any meetings.

[39]Comments at meeting of New England Fisheries Steering Committee, Boston, Mass., Aug. 1977.

[40]Tim Sullivan, "Unrestricted Fishing Approved Over Protest," Gloucester Daily Times, Dec. 8, 1977, p. 9; M. Estellie Smith, "The 'Public Face' of the New England Regional Fishery Council: Year 1," Technical Report 78-36, Woods Hole Oceanographic Institution, Woods Hole, Mass., April 1978.

[41]Cushing, interview for New England Fisheries Advisory Service, winter 1979.

[42]Tim Sullivan, "Eight-Day Halt to All Fishing," Gloucester Daily Times, Dec. 22, 1977, p. 9.

[43]Tim Sullivan, "Eight-Day Halt . . ."; Tim Sullivan, "Doubts about Fishing Closure--Some Boats May Defy Ban," Gloucester Daily Times, Dec. 22, 1977, p. 1; Tim Sullivan, "75 Fishermen Join in Brawl on Waterfront," Gloucester Daily Times, Dec. 28, 1977, p. 1.

[44]Tim Sullivan, "Fishery Council Suggests Old Rules, Lower Quotas," Gloucester Daily Times, Feb. 16, 1978, p. 9.

[45]Tim Sullivan, "Fishery Shake-Up--Action Delayed on Haddock Ban," Gloucester Daily Times, Feb. 24, 1978, p. 1; Tim Sullivan, "Fish Council Asks Haddock-Limit Cut," Gloucester Daily Times, March 3, 1978, p. 1;

Tim Sullivan, "Group Goes to Washington to Avert Haddock Closure," Gloucester Daily Times, March 6, 1978, p. 1; Tim Sullivan, "Haddock Decision Postponed," Gloucester Daily Times, March 7, 1978; Tim Sullivan, "Fishing Cut Asked to Avert Closure," Gloucester Daily Times, March 10, 1978, p. 1.

[46] The NMFS data were not necessarily a good indication of increasing fishing effort. Many boats could have taken out permits without actually fishing for groundfish. The requirement that those in groundfisheries have permits may have been observed more strictly at some times than at others.

[47] Richard G. Seamans, Jr., "Summary of Minutes of New England Regional Fishery Management Council Meeting--May 17-18, 1978," National Marine Fisheries Service, May 22, 1978, p. 2.

[48] Tim Sullivan, "Fleet Stunned by Quota Cuts," Gloucester Daily Times, June 23, 1978, p. 1.

[49] The Council was constantly having to "ask" the permission of the Secretary of Commerce because they were implementing rules under emergency regulations and trying to avoid lengthy public hearings and formal approval procedures.

[50] Scientific and Statistical Committee, memo on groundfish to the New England Fishery Management Council, June 27, 1978, p. 1.

[51] "Draft Fishery Management Plan for the Atlantic Groundfish Fishery," "Part I: Statement of the Problem," prepared by New England Fishery Management Council Staff, April 1979, pp. 66-69.

[52] Ibid.

[53] Newsletter, Massachusetts Inshore Draggermen's Association, May 1979, pp. 1-2.

[54] Other options certainly existed, but they probably would not have helped the Council out of its difficulties and were not under Council or industry consideration. See discussions in Frederick W. Bell, Food from the Sea: the Economics and Politics of Ocean Fisheries (Boulder, Colo.: Westview Press, 1978), ch. 4; Lee G. Anderson, The Economics of

Fisheries Management (Baltimore, Md.: Johns Hopkins University Press, 1977), ch. 5.

[55]Bell, pp. 148-150.

[56]Newsletter, Massachusetts Inshore Draggermen's Association, Feb. 19, 1979, p. 2.

[57]Jay Sperling, "Me. Fisheries Chief Questions Quota Approach," National Fisherman, 60:2 (June 1979), p. 38.

[58]For example, Vidaeus and Mueller.

Limited entry is neoclassical economists' textbook solution to problems in the use of a common property resource such as fish. Though they used the same term, "limited entry," the Council was not concerned about the same issues. Economists argue that because of technological externalities, fishermen produce on a backward-bending industry average cost curve where marginal cost exceeds marginal revenue. A limit on entry could move the industry to the industry marginal cost curve. This means that free entry into fishing leads to misallocation of labor and capital in the economy and, if demand is high enough, to overfishing. Fewer boats and fishermen can produce more fish, and those who move to other industries will add more to the economy's production than they do in fishing. Concerns about misallocation of labor and capital in the whole economy did not enter the Council's considerations. See Bell, ch. 3, 4; Anderson; Colin W. Clark, Mathematical Bioeconomics: the Optimal Management of Renewable Resources (New York: John Wiley and Sons, 1976).

[59]Sperling, "Me. Fisheries Chief . . .," p. 38; Leah J. Smith, "Case Studies on Economic Effects of Limiting Entry to the Fisheries," paper prepared for Workshop and Conference on Limitation of Entry into Fisheries, June 1978; C.H.B. Newton, "Experience with Limited Entry in Fisheries: British Columbia," paper prepared for Workshop on Limitation of Entry into Fisheries, May 1978; Allan Adasiak, "Experience with Limited Entry: Alaska," prepared for National Conference to Consider Limited Entry as a Tool in Fisheries Management, July 1978.

[60]Cushing, interviews of Gloucester fishermen, 1978-1979.

[61]Lord, interview with Chatham, Mass., fisherman, 1979.

[62]Generalizations on limited entry are based on Cushing and Lord, interviews with Gloucester and Chatham fishermen; comments at meetings of the New England Fisheries Management Council; "Limited Entry--Questions," editorial, Maine Commercial Fisheries, 6:8 (April 1979), p. 6; "Limited Entry--Doubts," Maine Commercial Fisheries, 6:8 (April 1979), p. 1; Tim Sullivan, "Limited Entry Debate Begins," Gloucester Daily Times, March 7, 1978, p. 1; Tim Sullivan, "Limited Entry Suggested," Gloucester Daily Times, April 21, 1978, p. 1; Christi Duerr, "Fishing Forum Centers on Politics, Canadian Imports," National Fisherman, 59:1 (May 1978), p. 17; Bruce J. Cole, "Limited Entry--Is It Something Whose Time Has Arrived?" National Fisherman, 59:4 (August 1978), p. 14; Economic Resources Center, Gloucester Fisheries Association, "Limited Entry Discussion," Aug. 14, 1978.

[63]"Limited Entry--Questions," p. 6; "Limited Entry--Doubts," p. 1.

[64]"Limited Entry--Doubts," pp. 1, 6; Sullivan, "Limited Entry Suggested," p. 1; Sullivan, "Limited Entry Debate Begins," p. 1; Duerr, "Fishing Forum Centers . . .," p. 17; Cole, "Limited Entry . . .," p. 14.

[65]Sullivan, "Limited Entry Debate Begins," p. 9; "Limited Entry--Doubts," p. 6.

[66]"Limited Entry--Doubts," pp. 1, 6; Sullivan, "Limited Entry Debate Begins," p. 9.

[67]"Limited Entry--Doubts," p. 1; Lord, interviews with Chatham, Mass., fishermen, spring 1979.

[68]Newsletter, Massachusetts Inshore Draggermen's Association, Dec. 1978 (pp. 2-3), Mar. 1979 (p. 4); "Limited Entry--Doubts," p. 6.